

BUTANE-PROPANE *News*

Headquarters for L.P. gas Information Since 1931

DECEMBER, 1953

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TECHNOLOGY

Season's



WARRENGAS

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GAS OF HIGHEST QUALITY



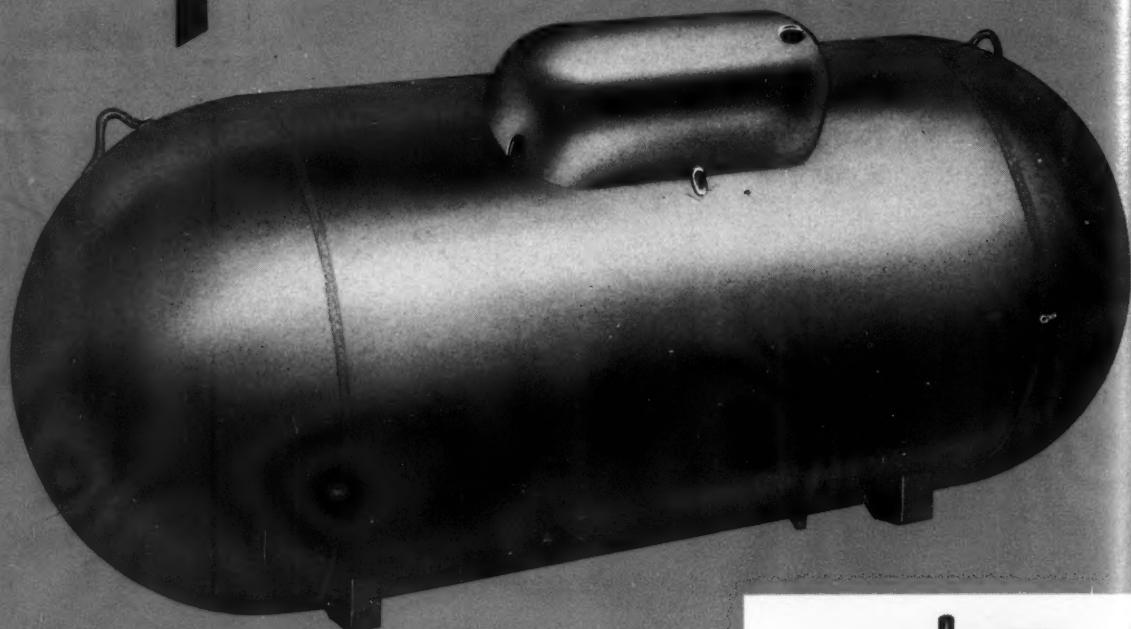
Greetings

WARREN PETROLEUM CORPORATION • TULSA, OKLAHOMA

**Designed for you by the makers of
famous Hackney quality LP-Gas Cylinders**



LP-Gas Systems



499-Gallon Hackney System

Shoulder Filling for Your Convenience—Filling valve and other fittings are grouped on the shoulder of the tank, where they are always easy to see and easy to reach without stretching. Eliminates strain on the filling valve and line.

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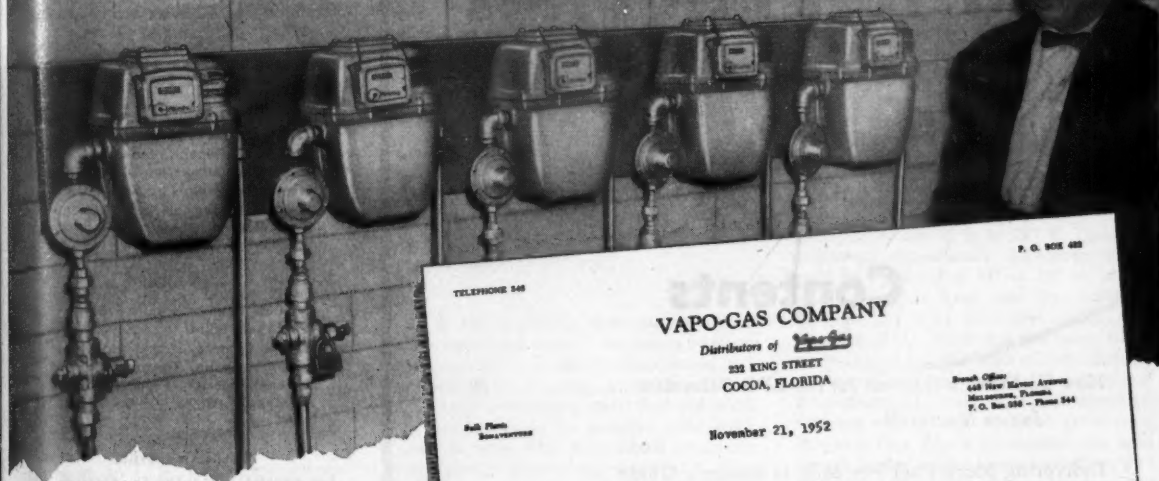
All models carry Underwriters' Laboratories approval.



ROCKWELL LP-GAS METERS

"Materially Benefit Our Service"

—says F. B. Surguine



All These Meter Advantages Can Be Yours


Whatever the size of your operation, you, too, can win customers, and harvest increased profits by using Rockwell LP-Gas meters. They are attractive, light in weight, easy to install and lastingly accurate. Your use of Rockwell meters will add prestige to your business, cut costs, build sales. Why not get full details today? Write—

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VAPO-GAS COMPANY

Distributors of 
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COCOA, FLORIDA

Branch Office
448 New Miami Avenue
Miami, Florida
P. O. Box 550 - Phone 544

November 21, 1952

Rockwell Manufacturing Company
Pittsburgh, Pennsylvania

Gentlemen:

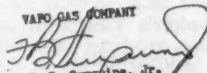
We wish to advise you that after many years of experimenting in the LP-Gas business, we find that by using Rockwell LP-Gas meters, we have materially benefited our service, both to ourselves and to our customers. This has been brought about as follows.

1. We find that the customers are better able to pay for a small amount of gas once a month, rather than paying for a big, heavy load once every four months.
2. We find that the customer likes the fact that they do not have to buy a large storage tank to use LP-Gas. This cuts down on their initial investment and naturally, they are very well pleased with that.
3. We find that by having metered service, we can get more for our gas. This maintains a higher gas sales price per gallon, therefore, benefits us from a profit angle. This is materially realized when our metered takes into consideration that the differential between our metered gas price and our regular gallon price is around eight (8) cents per gallon. Therefore, the metered service more than pays for itself.
4. While the cost of installation is greater to us as a company, still we find that it enables us to warrant the customer that they are getting all the service they paid for. We never have any complaints of underweight or short filling of cylinders.

All in all, we find that the metered gas service is greatly superior to the tank truck operation, where gas is sold in bulk by the gallon. We believe that our customers are better satisfied and are more loyal to us than they would be to one of our competitors or to ourselves, where we sell gas on the gallon basis in bulk.

Yours very truly,

VAPO-GAS COMPANY


F. B. Surguine, Jr.

Modern Vapo Gas Company
plant at Bonaventure, Fla.



BUTANE-PROPANE

News

VOLUME 15 • NUMBER 12

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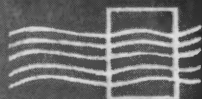
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BUTANE-PROPANE News is published monthly. Copyright 1953 by Jenkins Publications, Inc., at 198 So. Alvarado St., Los Angeles 57, California. Subscription price: United States and U. S. Possessions, Canada, and countries in Pan-American Postal Union (in advance): 50c per copy; one year, \$2; two years, \$3. All other countries: one year, \$4; two years, \$7. Entered as second-class Matter May 29, 1939, at the post office at Los Angeles, California, under the Act of March 8, 1879. Member of Audit Bureau of Circulation, Controlled Circulation Audit, Liquefied Petroleum Gas Assn., National Fire Protection Assn.

Publishers: GAS, The Magazine of the Gas Utility Industry; HANDBOOK BUTANE-PROPANE GASES; THE BOTTLED GAS MANUAL; BUTANE-PROPANE POWER MANUAL; Annual BUTANE-PROPANE News CATALOG; LPG BULK PLANT MAILING LIST SERVICE; WESTERN METALS.

LETTERS



Headquarters

for L.P. gas Information

Since 1931

Illinois

I have a brick home, one-story ranch type, well insulated, with hot water heat, baseboard radiation. We have a Weil-McLain round boiler, size 5-W-25, Series D, with a coal stoker. The house was built in 1948 and 1949.

Recently I have been thinking of converting to L. P. gas since we use gas range, water heater, and clothes dryer.

Can we use a conversion burner successfully and economically in this round boiler?

V.L.M.

A conversion burner should be applicable to your Weil-McLain boiler. This company may also have a gas burner complete with controls which will replace the coal stoker and which they use on the gas fired boilers they produce. They may have some suggestions for changes in the brickwork or baffles when converting to improve the operation and efficiency. It is suggested you write them, too.

The gas will be burned more efficiently than the coal even with the stoker. However, we cannot give any relative costs without knowing the fuel prices. There are many other advantages of gas such as better control, especially in mild weather, greater cleanliness, less maintenance, less noise, less power required, no labor for coal and ash handling and elimination of coal storage space which can be used for other services.—Ed.

Indiana

We have a question which you may already have answered in your fine publication and which we overlooked.

From time to time we have cylinders that develop pin hole leaks in the welded seam. Naturally, welders are reluctant to apply an open flame on a cylinder that has had propane gas in it. Therefore, what precaution should

be taken before attempting to repair one of these cylinders?

D.A.H.

It is recommended that the repair of cylinders which leak at the seams be done in shops and by personnel experienced and authorized to do such work. Rewelding on a tank affects the metal and old weld so that it should be retested after such work is done. This may entail returning them to the original fabricator.

Often these sand hole or pin hole leaks can be satisfactorily and effectively stopped by peening with a round nose punch.—Ed.

California

Would a vented space heater with a thermostat control fired with L. P. gas be harmful in any way to flowers or plants in a small greenhouse? My customer further asks what size heater (that is, Btu) would be required to keep a greenhouse 12 x 15 x 9 ft. high ceiling at a temperature of 75° F. The walls are glass, wood roof and cement floor.

A.M.J.

We do not know of any reason why a vented space heater would be harmful to flowers in a greenhouse. Care should be exercised to provide an adequate supply of fresh air so there is no danger of "spilling" products of combustion into the greenhouse from the draft hood.

From the description of the greenhouse, it would appear that there are $(12 + 12 + 15 + 15) \times 9 = 486$ sq. ft. of glass in the side walls and $12 \times 15 = 180$ sq. ft. of wood roof. The loss of heat through the glass walls will be about 1.13 Btu per square foot, per degree Fahrenheit difference between inside and outside temperature, per hour. The rate of heat loss through the wood roof will be about .48 Btu per square foot per hour on the same basis. At this rate the heat loss per hour will be 635 Btu per degree of temperature difference between the inside and outside temperatures.

We do not know the coldest temperature which may be expected at your customer's greenhouse, but for the purpose of this

example assume it to be 25° F. Then the maximum temperature difference which may be expected is $75^\circ - 25^\circ = 50^\circ$ F. The maximum heat loss by radiation through the glass walls and ceiling will be $635 \times 50^\circ = 31,750$ Btu per hour. However, this is not the entire load since no allowance has been made for infiltration through cracks around doors and windows.

There are several ways of calculating this loss. One way is to measure the total length of the cracks around all doors and windows and allow a certain loss per unit length of crack. Another way is to allow a certain number of air changes per hour and calculate the heat required to heat the fresh air entering, while a third method is to determine the total area of all doors and windows and allow .5 Btu loss per square foot per hour. (This last figure may vary slightly depending on conditions of windows and their tightness.)

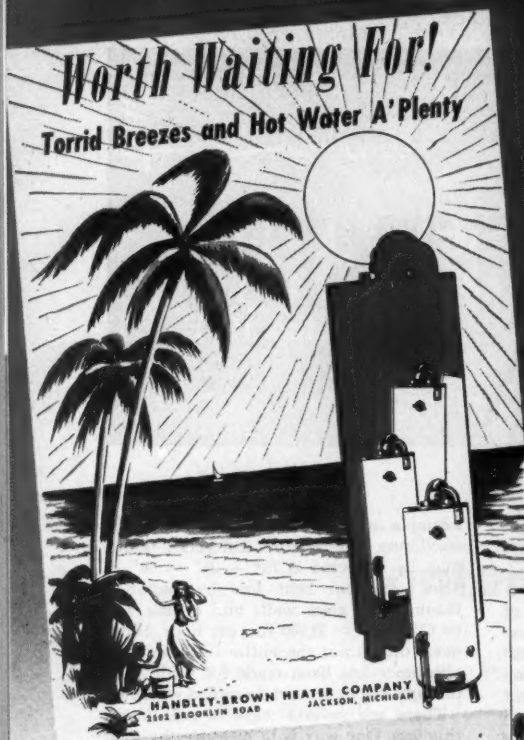
For convenience, and since information about the windows is limited, the third method will be used to calculate the heat required to overcome infiltration losses. From the second paragraph, 486 sq. ft. of windows and doors are in the greenhouse. The temperature differential is taken as 50° F., then $486 \text{ sq. ft.} \times .5 \text{ Btu} \times 50^\circ = 12,150$ Btu per hour.

The total heat loss from the greenhouse under the conditions given is $31,750 + 12,150 = 43,900$ Btu per hour. The heater must have an output rating equal to or in excess of this rate. Since the efficiencies of most vented space heaters fall between 75 and 80%, the input rating of the heater should be 55,000 to 60,000 Btu per hour or more.

We also refer you to an article entitled "Careful Sizing of Heating Equipment Essential to Satisfactory Installations," by E. G. Johnson, which appeared in the July, 1950, issue of "Butane-Propane News." This material will provide you with additional information on space heating problems.—Ed.

Norway

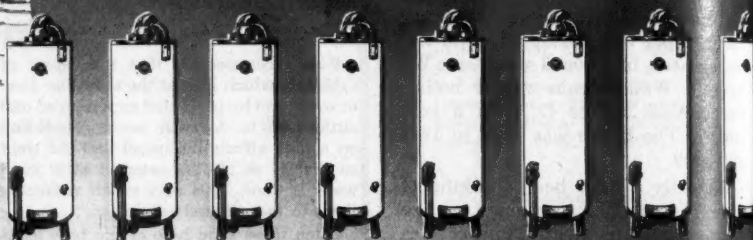
We are taking the liberty asking your help in figuring out a technical question which is of interest to us. We refer to the 2nd edition of the "Handbook for Butane-Propane



HERE'S WHY!

only HANDLEY-BROWN.

offers true Space Heater capabilities with its exclusive Heat Exchanger Type Combination Unit. "Reverse Air-Flow" principle of operation provides amazing economy and exceptional dependability. It's the WATER-AIR heated air and hot water service unsurpassed.



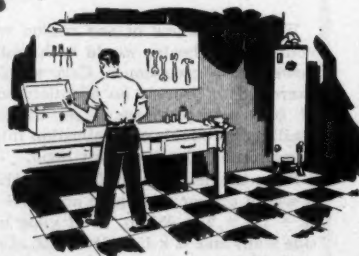
For Farm Milk Houses,



The WATER-AIR provides even working temperatures; no more frozen pipes, icy floors or chilling conditions. Constant temperatures and piping hot water make the WATER-AIR an all around milkhouse health conditioner. Best of all, both heat and 30 gallon hot water service are provided automatically by this space saving appliance.

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New Additions, Cottages, Motels, Clinics, Resorts, Garages and Service Stations are but a few of the many places where WATER-AIR services are demanded. The automatic room air temperature control can be placed anywhere heat is desired. Standard small size ductwork can be attached to the heated air outlet, to direct the heat flow wherever needed.

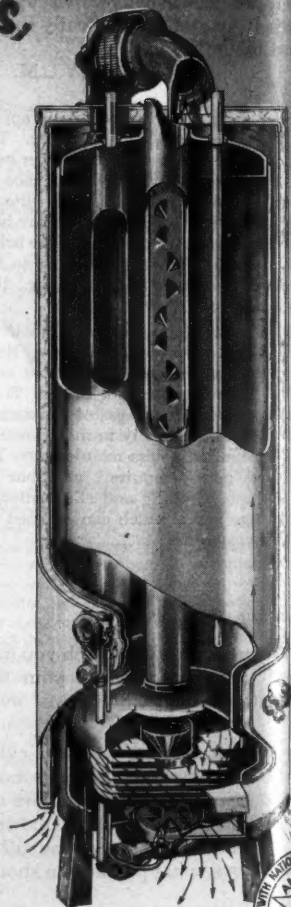


EXCLUSIVE DESIGN—Red Arrows show how air travels around the entire tank from bottom air inlets to the tank top. Tank heated air is then blower driven down the internal air tube to the finned Heat Exchanger, located directly over the 25,000 B.T.U. Burner. Burner and Heat Exchanger function automatically, providing over 120 Cubic Feet per Minute of torrid breezes *whenver* desired.

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HANDLEY-BROWN HEATER COMPANY

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PATENT
PENDING



Gases," pages 22-26. A calculation is given there relative to the quantities evaporated in a propane-butane mixture of 75 lbs. propane and 25 lbs. butane. Upon applying the formula given, it is found out that after 60% of the butane has evaporated, only 2,286 lbs. propane remains.

How would the situation be if we had a mixture of 95 lbs. propane and only 5 lbs. butane?

We have found out, using the same formula, that when half of the butane has evaporated (i. e., 2.5 lbs.), there is only 2.9 lbs. propane left, which gives not far from a 50-50 mixture. The calculation seems to indicate that if propane-butane do not form an azeotropic mixture, there will always be some pure butane left in the cylinder, provided the temperature is below the boiling point of butane.

Although the commercial propane we are getting in this country is supposed to contain a very low percentage (3-4) of butane, we have not found so far that any liquid butane has been left in the cylinders returned to us from customers, although the temperatures prevailing in this country during the winter season as a rule goes far below 32° F.

Is it possible that the propane, drawn from the cylinder, mechanically tears with it the small quantity of butane in the form of minute drops, fog, or whatever we want to call it, thus allowing the cylinders to be emptied absolutely? Probably the speed at which propane is drawn from the cylinder makes some difference?

We would very much like to hear your opinion on this matter.

R.V.K.

It is difficult to give an explanation for the apparent variance from the theoretical calculation of the amount of butane remaining in a mixture of butane and propane when it approaches its end point. This is especially so when the heat source temperature is below the boiling point of the liquid butane.

As you may well appreciate, actual development in processes quite often do not follow the theoretical formula or pattern expected. This variance is more likely to occur, we believe, where there is a decided predominance of one component.

In your case there is less than 5% butane, and, as you theorize, there may be a mechanical carry-over of butane with the propane as it evaporates.

Also the matter of partial pressure of gases may have some effect upon the relative evaporation rate of butane in the mixture. Evaporation, rather than the boiling of butane from the liquid may be tied in with the actual vaporization. As we all know water evaporates quite rapidly at temperatures well below the boiling point.

Experience in the colder climates of this country where temperatures go far below

the boiling point of butane is the same as yours. With 5%, or even a little more, butane in the mixture, no difficulty is experienced with butane remaining in the cylinder. Sometimes some oily ends from pentanes, oils or odorants build up over a long period of time, but this is not the same thing as we have discussed here.—Ed.

South Dakota

We have a KB6 International truck we have changed over to propane, and are not getting very much power.

Is it possible to plane the head on these, and if so, how much can be taken off to give the proper compression ratio for propane?

We are operating at about 5000 ft. altitude.

Also, is there any way to cool the manifold on this model?

If this takes a special manifold, could you give us the address of a company that makes one?

T.H.S.

It is possible to improve the performance by planing the head of this engine, but it is really preferable to install high-altitude pistons. If you can secure these through the local Harvester agency we would suggest that you ask for 10,000-ft. altitude pistons. If they cannot be secured from that source, your local auto parts store can order them from an independent piston manufacturer. These pistons will raise the compression to approximately 8:1, which is more than you could possibly secure by planing the head.

Ellis Manifold Corp., Los Angeles, has these manifolds in stock.—Ed.

Kansas

Please refer to your "Butane-Propane News" in your July '52 issue on Page 4.

We have an aluminum case gas meter like the one pictured on Page 4, Model 28-50.

It reads 604 therms. Can you tell us how to read it so that we will know the number of gallons?

Please send us some kind of reference as how to read the gallons.

W.E.K.

The conversion of therms into gallons is impossible without knowledge of the Btu content of the fuel that is being metered. One therm equals 100,000 Btu. One cu. ft. of propane releases 2521 Btu, while 1 cu. ft. of normal butane releases 3267 Btu. Mixtures of propane and butane vary in Btu content in proportion to the relative amounts of each fuel in the mixture. So the meter would need to pass 39.6 cu. ft. of propane, but only 30.6 cu. ft. of butane, to record 1 therm.

One gallon of propane contains 91,300 Btu, or 0.913 therms, while 1 gallon of butane contains 103,000 Btu or 1.03 therms.

Counters can be furnished which, by the

use of suitable gear ratios, register cubic feet of gas, gallons, therms, calories, or whatever measure is desired. In order to calibrate the meter correctly, it is necessary to know the characteristics of the fuel.

Therefore, it is not possible for us to give the exact information necessary to convert your meter reading from therms to gallons. You can obtain the information from the American Meter Co., by writing to their nearest district sales office, including the meter serial number and all the information on the name plate of the meter. If you know which district or branch office the meter came from, write to that office.—Ed.

South Dakota

Could you send me information on a temperature correction meter for LPG? And if they will pass state law requirements?

R.H.A.

There is no L. P. gas liquid meter which has an attachment to compensate for temperature. Some vapor meters can be purchased with both temperature and pressure compensation attachments. They are generally considered legal, but they are usually quite expensive.—Ed.

Alberta

We have an account that has Chevrolet trucks with GMC 278 engines converted to propane, and whenever the engines are warmed up we have difficulty starting them. If we push them just a few feet they will immediately fire and take off.

We have completely changed and renewed all the electrical system, including the starter motor. It seems that whenever the spark plugs are cleaned the equipment starts easily for a few days, then we are back to pushing again.

S.G.W.

Diagnosing at long distance is difficult, but your letter contains two clues which may lead to the answer.

A coil that is working close to the limit of its capacity will sometimes provide ignition while it is cold, but fail to produce sufficient voltage after it is heated up. We suggest that you have these coils tested on an instrument equipped with a coil heater, and if a considerable drop is shown, try a super-coil, such as a Mallory, on one engine.

The fact that the hot starting trouble occurs a few days after the plugs are cleaned indicates that there is enough fouling to build up resistance. The common causes of plug fouling are the use of too cold plugs, operating under a rich mixture, and fouling with carbon from oil. Tracing these causes out is simple. The air-fuel-ratio analyzer will tell if the carburetion is right. Oil consumption figures will tell you if the fouling might come from excess oil getting into the cylinders. If the fuel and oil conditions are normal, try hotter spark plugs.—Ed.





Editorial Comment

TO THOSE OF OUR MOTOR FUEL ENTHUSIASTS who may have become troubled over the recent publication of a widely distributed adverse report regarding the use of propane as motor bus fuel, we would like to bring a word of comfort. There are those in the bus business who do not agree with the above reports. The nice -- and convincing -- circumstance is that their facts and figures cover a total of nearly 800 buses, all of which have been in regular daily service for approximately three years in three major city transportation fleets in Chicago, San Antonio, and Wichita.

Their findings were presented Nov. 5 at the National Fuels and Lubricants Meeting of the Society of Automotive Engineers. All three reports agree on the fundamentals, which are brought out in the report on the Chicago operation in this month's Power Department, on page 126. Some of our smog-ridden cities, like our own Los Angeles, might give serious consideration to the fact that propane powered buses are being used on the downtown routes in Chicago, and that the diesel and gasoline buses are being relegated to the outlying areas where the halitosis from their exhausts will offend fewer cash customers and voters.

THE OFFICE OF THE STATE FIRE MARSHAL OF KENTUCKY has offered to send an inspector to make an investigation of any fire where L. P. gas has been installed. This is the outcome of recent court awards of damages against L. P. gas operators who had supplied the customers, under circumstances where neither the gas nor the installation were at fault, but which facts could not be proved months later at the time of the court action. Following such an investigation, a record of the inspection, with statements of eye witnesses and other persons concerned will be filed in the Office of the State Fire Marshal for preservation and future reference. This will make it impossible for the customer, who says at the time of the fire, "The gas wasn't to blame; the fire started in the front of the house" to change his mind ten months later after discovering that the operator was covered by liability insurance. This is an offer that is open to any L. P. gas operator in the state, but the inspection will only be made on request. This appears to be a very valuable service to the L. P. gas distributors as well as to the insurance companies carrying the liability. It may not be new, but we recommend it as very good.

Ed.

RECEMBER

Merry Christmas



STAINLESS STEEL FITTINGS

FOR LIQUID
PETROLEUM GAS

FOR ANHYDROUS
AMMONIA

New Anhydrous Ammonia
Equipment Catalog soon.

Free Engineering and
Planning Service for
Bulk Plants.

RONEY

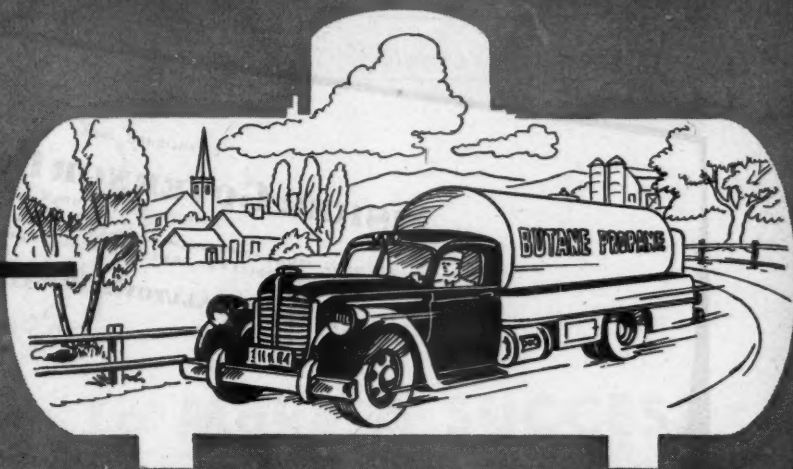
INC.,

105 COLE STREET, DALLAS, TEXAS

EQUIPMENT AVAILABLE FOR IMMEDIATE SHIPMENT

YOUR COMPLETE SUPPLIER — Manufacturers & Designers of Ammonia & LP Gas Control & Handling Equipment

BEYOND THE MAINS



Can You Reduce the Cost of Insurance?

OPERATORS IN THE 82% EXCESS PROFITS TAX BRACKET can afford to skip this, but it will be of interest to those who feel that insurance rates in the manual are too high, and particularly to those who are griped because they are forced to pay even higher than manual rates for their casualty coverage.

We have been getting rumors over our private grapevine that casualty companies are becoming more open minded on the subject of liability coverage for the L. P. gas industry. We learn that certain insurers believe this coverage can be provided on a sound insurance basis at rates considerably below those now printed in the book, if the risks can be properly pre-selected. The practical problem is the mechanics of pre-selection of desirable risks.

There is no problem about the proper basis for pre-selection. That has been known since the beginnings of the insurance industry. The desirable risk is the one whose operating facilities and operating practices are maintained at high standards of safety, as evidenced by competent inspection of facilities and investigation of practices, and confirmed by records of low accident frequency and microscopic loss ratio. Insurance companies are the world's most successful gamblers—they leave so little to chance.

Safe Operation Will Be a Factor

But to get back to you and your pocketbook. These casualty companies are not talking about peanuts. They are thinking in terms of reduc-

ing the net insurance costs of their selected risks to one-fourth or even one-third **BELOW MANUAL RATES**. In all the discussions we have heard, one point stands out like a lighthouse—the emphasis on safety throughout the distributor's operation.

It Is Not Just a Dream

And lest you think this is just wishful thinking, in the January issue we will give you a complete factual report on an insurance program that is returning the kind of savings mentioned above to a sizeable group of operators who have evolved their own method of providing pre-selected desirable risks. Significantly, these operators have been giving safety programs and safety training of employees the "full treatment" for several years.

Short "Range" Selling

Noting a nice shiny electric range in the appliance showroom of one of our good LPG distributors, we took occasion to rib him about following a short range sales policy. You know the story—if you sell a gas range you make a small profit on the sale of the appliance, and you have a chance to make a continuing profit on the sale of gas. But if you sell an electric range, you make only the small profit on the appliance sale, and your competitor, the utility company, makes all future profits on the customer service.

Karl Abell

ESTABLISHED 1880

FISHER GOVERNOR COMPANY

MANUFACTURERS OF
GAS REGULATORS - DIAPHRAGM CONTROL VALVES - REDUCING VALVES
LIQUID LEVEL CONTROLLERS - PRESSURE REGULATORS - PUMP GOVERNORS

MARSHALLTOWN, IOWA, U.S.A.

To: LP-Gas Tank Manufacturers and Dealers
Subject: FISHER Bulk Tank Regulators

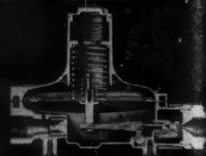
Gentlemen:

As the world's largest exclusive manufacturers of pressure regulator equipment (more than 1200 employees), our entire engineering, designing, development and manufacturing facilities are devoted to building better regulators. As a result, they are unequalled in quality, capacity and regulation.

Insist on FISHER REGULATORS on every tank for trouble-free service.

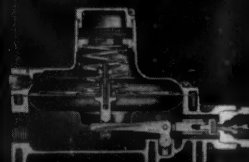
Write for complete data.

FISHER



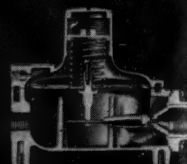
TYPE 722V "WORKHORSE" SUPER DELUXE

Recommended for 500 and 1,000 gallon tanks. Capacity 680 cfh (1,700,000 BTU) or more.



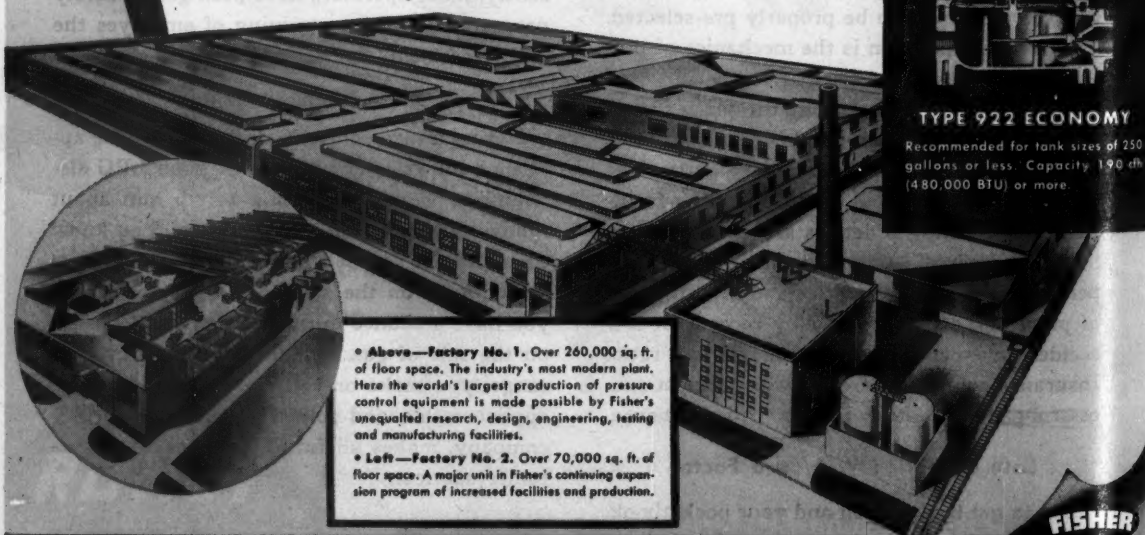
TYPE 932 "HUSKY" SUPER STANDARD

Recommended for 250 to 300 gallon tanks. Capacity 330 cfh (830,000 BTU) or more.



TYPE 922 ECONOMY

Recommended for tank sizes of 250 gallons or less. Capacity 190 cfh (480,000 BTU) or more.



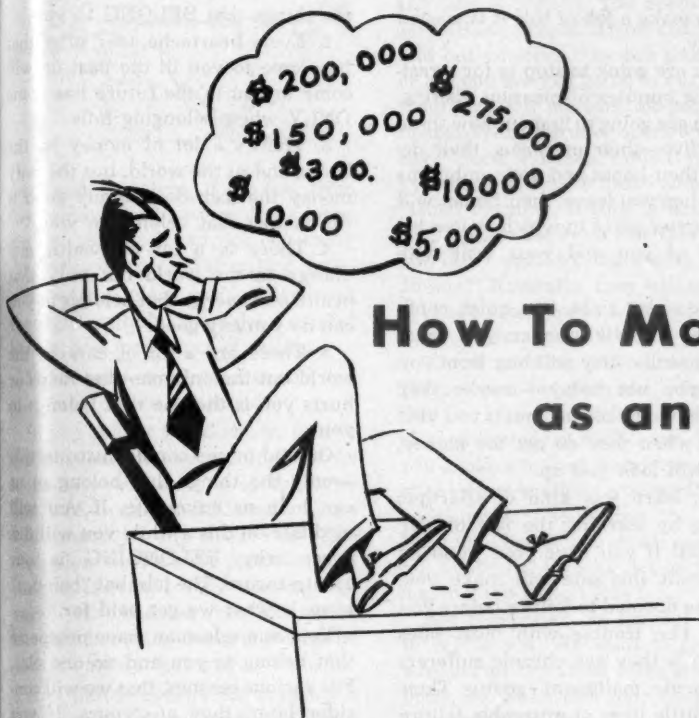
• Above—Factory No. 1. Over 260,000 sq. ft. of floor space. The industry's most modern plant. Here the world's largest production of pressure control equipment is made possible by Fisher's unequalled research, design, engineering, testing and manufacturing facilities.

• Left—Factory No. 2. Over 70,000 sq. ft. of floor space. A major unit in Fisher's continuing expansion program of increased facilities and production.

LEADS THE INDUSTRY IN RESEARCH FOR BETTER GAS PRESSURE CONTROL

FISHER

Since 1880



How To Make A SUCCESS as an LPG Salesman

The money is all there, but you don't get it by dreaming. You've got to know how to go out and bring it in.

An expert in the selling field opens up his book of knowledge and experience and shows you his "secrets of selling". Currently devoting half of his working week to public relations and sales training, the author spends the balance of his time on the "firing line". This part-time selling effort consistently produces from \$10,000 to \$12,000 worth of tank and appliance sales per month. In this first article in a series on the subject of "selling", Mr. MacKrell tells you the secret of his success.

By James MacKrell
Mandeville, Louisiana

IF there were many roads leading to a successful life many of us might miss the right one, but always remember there are not many roads to success BUT JUST ONE!

The only rule for success is: first, find a human need, and, second, satisfy that need.

In the LPG industry, that rule is simple because we deal with some of life's essentials:

1. In order to be healthy and happy, families must cook.
2. L. P. gas is the most efficient and cheapest fuel in rural areas for cooking.
3. People must be warm in cold weather and cook in hot weather, in order to be happy.
4. LPG is the answer to that problem.
5. To be healthy and happy, people must have a satisfactory method of storing perishable and left-over foods.

6. We have the answer to that one, too—refrigeration.

We are not selling or servicing luxury items or specialty items but basic fundamental essentials to modern every-day living.

Remember well this point—let it get past your conscious mind and down deep into your sub-conscious mind until it permeates all your thinking:



Nothing Is Work **UNLESS** You Would Rather Be Doing Something Else.

Think that one over for a while. You can go on and on, doing what you really want to do, at an exhilarating pace until you collapse from sheer exhaustion, but you never grow tired of what you like to do. It's paradoxical but it's true; you grow tired in the way, but never tired of the way.

You've got to get and keep the right mental attitude about effortless selling. This can only come from a genuine love for people—a sincere personal interest in their desires and wants. It isn't a drudge or dread to call on a prospect or cold-canvass a home if you have the right mental attitude before the door is opened and you meet someone face to face.

This is a golden opportunity; these people will be made more comfortable; they will be happier, healthier, more prosperous—because of the service you can and will give them.

The danger of a kerosene explosion and fire will be eliminated. You may be the means of saving a child's life, or an entire family's life. Or you save these people the back-breaking toil of carrying wood in the rain and cold, or in the blistering heat.

This is wonderful—believe me—if you will only remember that you are going to render these people a service that is a daily blessing to be enjoyed

by them for the rest of their lives. There is no effort required—in fact, if you make a job of this it is wasted energy.

You are going to stop in for a restful few minutes of pleasant visiting.

You are going to find out how these folks live—their problems, their desires, their hopes and their ambitions and when you leave, their homes will be a better place in which to live because of you and your visit with them.

If you visit right, in a quiet, confidential, friendly manner, you won't have to sell—they will buy from you—maybe not today—maybe they don't have the money, but if you visit right, when they do get the money, they will look you up.

You learn this kind of effortless selling by learning the law of selflessness! If you have your mind on the profit this sale will make you, you are doomed to failure before you start. The trouble with most sales people is they are chronic sufferers from acute, malignant ego-itis. Their puny little lives of miserable failure revolve around a very small center—themselves. Their every sentence starts with "I." I am going to make so much—I am going here or there—I am going to do this or that, and the salesman who fits this picture is on the way out.



The Greatest Word In Our Language Is "Belonging."

Regardless of the size of your vocabulary there is one word that means more to you than any other, and that is the word "BELONGING."

Think with me a moment and consider the following points:

1. Every joy, every happiness, everything and anything that has

ever brought you a moment's enjoyment has come from and only from the things that **BELONG** to you.

2. Every heartache, tear, grief that has come to you in the past or will come to you in the future has come **ONLY** when belonging fails.

3. There's a lot of money in the banks and in the world, but the only money that can do you any good is the money that belongs to you.

4. There is a lot of health and energy in the world but only that health and energy that belongs to you can do you any good.

5. There are a lot of cars in the world but the only one that helps or hurts you is the one that belongs to you.

On and on we could illustrate this—only the things that belong to us can help us enjoy life. If you will meditate on this a while you will discover why **BELONGING** is our greatest word. The job that "belongs" to us is what we get paid for.

You, as a salesman, have prospects that belong to you and no one else. For various reasons, that we will consider later, they are yours. If you realize they belong to you and you go after them and serve them, then belonging to you will bring you success.

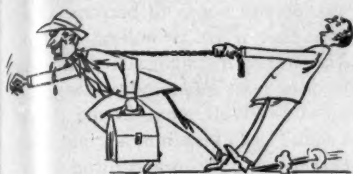
If through any reason you fail to reach those who belong to you, you will suffer—loss of your commission; they will suffer—loss of your service. Remember they are yours—they belong to you. Resolve to get every one.

Selling Is Strictly a Matter of Attitude—the **RIGHT** Attitude.

It is well to remember that what is success to one man would be failure to another, so here is where we define success for an LPG Salesman.

Whatever else success may mean, it must first mean a genuine desire to put company interest ahead of personal convenience—in the certain knowledge that only as the company remains strong and grows can the salesman remain solvent and grow. Success must mean a livelihood sufficient to more than adequately meet the standard of living to which the salesman aspires.

Beyond this point I cannot go because each of us differs greatly in his needs and satisfactions, but surely, if we are able to provide for our loved



ones and ourselves, if we feel from day to day that because of our labor we are getting ahead, we can enjoy the fruits of successful selling.

So with a clear mind, filled with the right attitude, let's take a careful look at the mechanics of selling.

First—who are prospects and second, how do we get them?

If you watch a champion in any field it seems that everything he does looks easy whether it's on the baseball field, in the football stadium, the golf course or the prize ring. The champion works with precision and ease, doesn't he? Why does it look easy? It's because the champion knows what he is doing and why he does it exactly that way.

And that is exactly the separation line between the successful salesman and the failure. The successful salesman knows what he is doing and why he does it exactly that way.

Qualify Your Prospect

In the field of selling I have watched and listened to many a would-be salesman go into his sales pitch the moment someone came to the door, without first finding out whether this person was a suspect, a prospect, or one who could not buy a tank and range if they were selling for \$25 each.

For example, I would like to own a Cadillac, but I'm neither a prospect nor a suspect for one because my personal obligations at this time make buying a Cadillac impossible.

A prospect for a tank, range, refrigerator, deep freeze, or whatever we are selling, must meet at least these requirements: 1. There must be a genuine need; 2. There must be a financial ability to satisfy that need, either in cash or by a good credit reputation.

So the wise salesman must separate the sheep from the goats long before he goes into his sales pitch.

Remember what I said about hav-

ing the right mental attitude before the door is opened. You are here to serve these people, if you can. So to find out whether they are prospects or not you are just going to visit with them for a few minutes. Be perfectly honest. When the door opens and you say "Good morning," don't spoil it by saying, as I have heard some say, "Good morning, it sure is hot, ain't it? I'm from the John Doe Gas Co.—you don't want to buy a new stove, do you?" Naturally, they will say no.

I have heard quite a few salesmen start off something like this:

"Good morning, my name is Joe Doakes and I'm with the John Doe Gas Co. I have a catalogue here full of good things for your home. I wish you'd take a look at the pictures. You might see something you want."

Selling is like telling the truth. Why lie when it's so much easier to tell the truth? So why not go at selling, too, the easiest way?

But remember, we are not trying to sell as yet. We want to find out whether or not these folks are prospects, so when the door opens say something like this:

"Good morning—I'm Joe Doakes, your representative for the John Doe Gas Co. I'm just visiting this morning, trying to get acquainted with you folks in this neighborhood, because we are sort of like the fire department. You may not need our service today, but when you do need us you'll want us to come in a hurry."

Just use any opening that comes natural, to start a visiting conversation. And get inside the home as quickly as possible. A good rule to follow is to ask for a drink of water; that's almost certain to get you into the kitchen at once. Immediately start asking about the family; where the father works, how many children—their likes and dislikes, and then start talking about what the housewife likes to cook best of all.

Use Your Eyes and Your Head

While this conversation is taking place, without asking, notice the kind of stove, refrigerator, washing machine, hot water heater, deep freeze, etc., which is in the house.

After you have visited a few minutes you should inquire what the prospect might need in way of an appliance. Ask what she intends to

buy next. Always remember: *every home intends to buy something next.*

Then ask the direct question: "How long do you think it will be before you are ready to get this?" From her answer to this question, you can determine whether or not this home is a real prospect or a suspect. If she is a prospect, go directly to your sales pitch. If not, graciously but quickly excuse yourself, make a record for a future call and move on to your next call.

Ways To Get New Prospects

The very first thing each morning, before you call on any of your prospects for the day, make five calls on old users. Just start out on any road of your choosing. When you see a gas tank in the yard pull in and find out who lives there. Ask them to let your truck fill their tank. I've made many a call like this, and not one time have I found a discourteous answer. Then visit with these people and take a few minutes to find out what they intend to get next. If you spend the first hour and a half of your day visiting five homes for about 15 minutes each, you will never run out of prospects.

Advertising has its place, and company policy has its place. And five prospect calls the very first thing each morning has its place. Suppose you leave the office around nine each morning and you make five calls of 15 minutes each. By 10:30 you have one to five live new prospects and the day still ahead of you to call on definite prospects that should be expecting you.

How To Use Analytical Selling and Make It Produce Results.

Every sale is the result of faith. The word "faith" comes from the Greek, which means, when translated literally, a condition that affects a human being intellectually, emotionally, volitionally—in other words, it's something that is of the head, the heart, the hands. Let me illustrate: A good friend of mine bought a new car last week—no salesman called on him—he just went out and bought it. Now notice these three steps in his thinking.

First, intellectually—he had convinced himself his old car was costing him too much to own and operate.



The horn wouldn't blow, the carburetor wouldn't carb, the rear end was shot. He needed new tires and every month of late there had been a minor repair bill. He must have economical transportation to handle his job.

Second, emotionally—this new car filled him with personal pride. Its gleaming white sidewall tires and its beauty of design thrilled him emotionally. He looked at the car, then looked at me and said, "Isn't that the prettiest thing you ever saw?" I agreed with him. He was genuinely happy with his new possession. It completely satisfied an emotional spot in his heart.

Third, volitionally—once he was convinced he needed it and he would thoroughly enjoy it, his hands moved—he signed the sales contract, we got in it and drove away.

Now every sale that requires a sales contract fits those three steps. Why make them hit or miss, accidentally, when the easiest way is to lead the prospect through them patiently, deliberately and successfully, so let's make a chart on Analytical Selling:

1. Intellectually—
 - (a.) Attention
 - (b.) Interest
2. Emotionally—
 - (a.) Desire
 - (b.) Pride
3. Volitionally—
 - (a.) Action
 - (b.) Close

From this it is plain that the focal point is **DESIRE**. The desire to own and enjoy is either present before you start talking to the prospect, or a desire is created with varying degrees of effort on your part as a salesman.

Remember, good salesmen are fast thinkers. Most prospects are *not*—which means they can't be hurried, pushed or shoved into a sale.

Think of every thing you can say which will claim your prospects' attention and interest. Appeal to their

head—this is safe—it's convenient—it's economical. It's clean, it's quick. Hammer away at their head—get them to say "yes" again and again. Get them to agree with you just as many times as you can. Once you are certain, and you will be certain by the number of times they have said yes as they agree with you on just these two points, start letting them have it with straight, hard, body blows to the heart.

Appeal To Desire and Pride

Appeal to "Desire" and "Pride." How pretty it will look—the beauty of design of the range—the security it gives—how proud they will be when the neighbors come in or the children come home. Get them to say "yes" to as many questions as you can think of on pride and desire.

And now for the close. Remember, all prospects are shy of an order book. Keep it in your briefcase. Carry a large scratch pad. And after they have taken steps 1 and 2 with you many times—lead them to step 3—Action. It's very easy. Just say, "Now let me show you something," and start figuring the job. Put down the cost of the tank, gas, outlet and range and add it all up. Figure and add the sales tax. Figure the 10% minimum down payment and deduct whatever your trade-in is from the down payment. Then determine the exact amount of the monthly payment. Once this is done go over each item carefully with the prospect and then say these magic words—"Do you understand all this? Now—does this sound all right to you?" They will say—"Yes that sounds all right." Then get your order book out and start writing the order, handing them your figures for them to call off to you while you write up the sale.

I can't think of any profession that holds the opportunities for real service and profits as the LPG industry. Let me close with this illustration. In December of 1951 we placed a salesman wanted ad in a local weekly paper at one of our branches. The manager and myself were talking of our prospects for a new salesman when a tall, gaunt, man walked in. His blue serge suit was so old and shiny it looked as though it couldn't survive one more trip to the cleaners. We were both impressed with his sincerity and eagerness. He was about 40 years of age. They were expecting a child—he was broke—his

old Hudson was a wreck. All he had in his favor was eagerness, sincerity, and determination. But that is all any person needs to become a good salesman if he is willing to learn. The branch manager asked him to go into the next room and turning to me he said—"Well, what do you think?" I said, "Let's give him a trial." So he called him back in and hired him.

Know Your Product Well

I had been working with a new man one day and then riding with another the next day, but for some reason I wanted to do a better job with this man so I told the manager I wanted to work with him at least one week. The first day we spent at the office—we talked of nothing but our products and services. We inspected tanks, bulk plant and the products we sold. We spent the next day writing Joe Doe orders, again and again, until he could write an order for anything we sold single or in combinations without making a mistake.

The next three days we spent cold-canvassing and selling in his territory. I outlined each selling step as it was being taken. The following Monday he went on his own. This man has now been with us for 18 months and during this entire period he has a record average of \$6000 a month installed. He has a new Hudson. He won over and above his commissions in sales contests a new refrigerator, automatic washer, range and deep freeze. In December 1952, including his yearly bonus, he had exactly \$1000 for Christmas. He visited me a few Sundays ago and told me that this year—1953—he was putting \$275 a month in the bank in a savings fund toward a new home.

Would you call this man a successful LPG salesman?

In what other field of endeavor could a middle aged man, with no previous selling experience grow from abject poverty to financial security in 18 months?

Watch for succeeding articles in this interesting and educational series of selling which will appear in future issues of BPN.—Ed.



Office and salesroom of Reliance Gas Co., Kaufman, Tex., is located near main business district. Note radio tower for two-way radio communication rising at rear of building.

Delivering More Fuel Per Mile Is Dealer's Guide to Bigger Profits

By Carl Abell

If you think competition is rugged up your way, you should take a look at the situation around Dallas. There are 25 operators delivering gas to consumers in an area 30 miles wide and 75 miles long, beginning at the southeast city limits, and centered on Kaufman and Athens.

Under such competitive conditions, a distributor's customers are likely to be badly scattered, which makes routes long and relatively unproductive, and tends to keep operating costs high. Yet even under these conditions, it is possible through careful planning and the elimination of wasteful practices, to conduct a gas distributing business at a profit.

We had called on A. A. Pickens, of

Butane Supplies, Inc., wholesalers of LPG and other commodities required by the industry, in Tyler, Texas, to get a report on the results of the adequate storage campaign which he had conducted for the Texas Butane Dealers Association.

"The results were just what you would expect," explained Pickens. "Some dealers did a good job, and some did nothing. We can look through our ledger sheets on our own customers, and just by noting which are taking their discounts regularly, we can call off the list of our dealers who conducted successful tank campaigns. Don't misunderstand me. They are not taking discounts just because they got their customers'

tanks sized properly. They are able to take their discounts because they are well managed. Sizing tanks is just another evidence of good management. The day is past when anyone who can drive a truck and install a kitchen stove can make money in this business. On the other hand, efficient management will still make a fine profit. Now, you take Reliance Gas Co., over in Athens and Kaufman—"

The details were so interesting that we took a detour through Athens and Kaufman to look at the situation at first hand.

Reliance Gas Co. operates two main branches, each with an attractive appliance store and office located in the

Jack Blanco, president of the company, manages the branch at Kaufman, and Tom Sharp, secretary, manages the Athens end. Personnel is pared to the core, and with the ex-



ception of the drivers and the salesman who divides his time between the two branches, every employe does more than one job. Each office has a bookkeeper, who also serves as cashier and as special dispatcher in relaying customers' calls to drivers. The service men make all installations, and take care of maintenance of the buildings and all equipment except the trucks, which are serviced in outside shops.

Date	Gal.	Del.	%	Cash	Chg.
Jan 4	80		90	✓	
27	90		90	✓	
Feb 1	95		85	✓	
Mar					
Apr 5	90		85		✓
May					
Jun 6	80		85	✓	

Date	Gal.	Del.	%	Cash	Chg.
Jul					
Aug 15	65		80	✓	
Sep 22	110		90		✓
Oct					
Nov 18	85		85	✓	
Dec 29	90		90	✓	

Ivy B. JONES B - 150 U

The three features which enable the company to operate at a good profit in spite of tough competition, as explained by Blanco, are the method of routing and scheduling deliveries to hold down delivery costs, the Kardex customer ledger system which saves half of the bookkeeping time and keeps credits under control, and a monthly report which is made up immediately after the 10th of each month, and which combines a rough balance sheet and a summary of vital operating statistics.

The monthly report is a sort of guide chart for the operation. The balance sheet end reflects comparisons with the previous month in purchases, sales, inventory, collections, accounts receivable, cash on hand, operating expenses, and surplus. It is skeletonized to show only the items

which are subject to change from month to month. Since the taking of physical inventories requires time and entails considerable expense, actual inventories are taken only every third month. During the intervening months, the inventory is estimated quickly by comparing the stock of appliances with the list which constitutes what the managers regard as the ideal stock of these items. Pipe, tubing, and fittings are likewise estimated in a similar manner.

Controlling Operations

The end of the report showing operating statistics deals only with gas, and its delivery. Such important items as gallons delivered and miles operated by the bulk trucks are included. From these two figures, the number of gallons delivered per

[illegible]

**To: RELIANCE GAS COMPANY
KAUFMAN, TEXAS**

Date delivered MAR 1953

Gallons _____

Gross Bill \$ _____

Discount \$ _____

Net Bill \$ _____

Pay **NET BILL** on or before _____
and save your discount.

To insure prompt credit when remitting by mail
please enclose this portion of card.

Retain this stub
for your records.

MAR 1953 Date _____

Gallons _____

Gross Disc. Net

RELIANCE
GAS CO.
Kaufman, Texas
2 WAY RADIO
EQUIPPED TRUCKS

Customer's state-
ment form is print-
ed on government
postcard. Left por-
tion is mailed back
with payment,
right portion be-
comes stub for
customer's receipt
record.

quently; and (4) discontinuing serv-
ice to customers who cannot be
served economically because of high
mileage required to reach the loca-
tion.

With these points in mind, the
route can be analyzed, and a plan set
up to increase the gallons delivered
per mile of route. More appliances
per home are definitely part of the
picture. Sizing of tanks is important.
Concentrating sales effort on pros-
pective customers located on the se-
lected route, but now served by com-
petitors, is frequently called for.
Through it all, the buying ability and
habits of the various customers need
to be known.

Close Contact with Customers

And with the intense competition
in the territory, experience showed
the need to keep the drivers in close
contact with the customers, as a
means of protecting against loss of
accounts to competitive dealers. In
the opinion of Jack Blanco, the prob-
lem called for a different system of
records than was then in use. Some-
thing that combined a delivery guide,
a customer record, and a visible con-
trol system was needed. Experience
with the Kardex customer ledger
system indicated special advantages
to be derived from a system which
worked in the same manner.

The Wilson-Jones Ring Visible

truck mile is calculated. This figure
is probably the most important entry
on the sheet when it comes to plan-
ning and controlling the operation.

A gallon of gas costs a certain
amount, layed in at the storage plant.
This cost is fixed—it varies only with
price changes originating with the
producer. To this must be added the
cost of overhead, which changes with
volume, and changes slightly with
administrative changes in manage-
ment procedure. For a given volume,
the overhead costs are quite stable—they
are sometimes called "fixed
costs". While some slight savings may
be made from time to time, there is no
way in which the overhead costs can
be changed radically. Promotional
costs and delivery costs vary directly
with the wisdom and judgment of the
management. Since delivery cost is
the largest single item of operating
expense after the purchase of fuel, it
is the point on which the Reliance
Gas Co. management has concentrat-
ed its efforts for control. The figure
that shows gallons delivered per mile
of truck operation on the monthly re-
port reflects the effectiveness of the
operational control.

Figuring Profit Per Mile

A gallon of gas at the storage plant,
plus its share of the overhead costs,
represents a certain figure, and leaves
a certain margin to cover the variable
charges arising from delivery, and
to provide a profit, it is hoped. The
driver is paid a salary, which is in-
cluded in the fixed charges. It costs
so much per mile to pay the direct
operating costs of the delivery truck.
Knowing the margin available in the
selling price of the gallon of gas, after
accounting for purchase price and
fixed costs, it is easy to figure how
many gallons must be delivered per

mile to pay the operating cost of the
trucks.

As a hypothetical example, let us
suppose that the operator must deliv-
er 10 gallons per mile to pay the de-
livery cost. He must plan his oper-
ation to deliver more than 10 gallons
per mile in order to make a profit.
The first 10 gallons delivered in that
mile pays the cost, and the margin on
any additional gallons delivered
represents the "net". Thirteen gallons
per mile will make a nice profit, but
16 gallons per mile will double it.

There are four possible methods of
increasing the gallons delivered per
mile—(1) securing additional custo-
mers along the route; (2) increasing
the fuel consumption by customers
already served on the route; (3) in-
creasing the size of the dumps by the
use of larger tanks serviced less fre-

Business reply en-
velope form is left
by driver when de-
livery is made and
customer is not at
home. Copy sug-
gests prompt pay-
ment so that cus-
tomer may take
advantage of dis-
count saving.

Dear Customer:

Today we delivered into your tank _____ gallons of L-F Gas.

You may deduct \$ _____ from the amount shown on the
enclosed delivery ticket if paid on or before _____ 1953.

(providing all previous gas bills are paid in full).

PAY IT TODAY—GET IT OUT OF THE WAY.

When you take your discount we both save money.

Use this envelope in making your remittance.

2-Way Radio Equipped Trucks
ROPER RANGES
SERVEL REFRIGERATORS
PERMAGLAS WATER HEATERS
SMITHWAY PROPANE SYSTEMS

RELIANCE
GAS CO.

binder seemed to offer a practical means of providing a portable adaptation of the visible file system. A form was developed, using the Wilson-Jones standard blank sheets, about 3 by 6 inches, which showed the complete delivery history of one account for a complete year.

Complete Data at Fingertips

The customer's name and the details of the storage tank are typed on the visible margin of the card, using the information supplied by the driver. The example shown in Fig. 1 indicates that customer Ivy B. Jones has a 150-gallon tank. "B" shows that it is an old tank originally made for butane, and that only butane should be used in filling it. "U" indicates that it is an underground installation. If the code letters were "P" and "A", it would indicate a propane tank located aboveground. The delivery record shows that the tank is adequate for 30 day service for the customer's present appliances in the middle of winter, with a suitable reserve of fuel to cover emergencies which might render the tank inaccessible for a period of more than two weeks. From the record, it is also apparent that if this customer owned one more major appliance, he would require a larger tank. This would be a propane tank, and would be installed aboveground unless Mr. Jones insisted on having it buried for the sake of appearance.

The last two columns on the customer's sheet show whether the driver collected cash or entered a charge for the delivery. If the customer habitually pays cash, but is absent at the time of delivery, a charge slip is left without question. If charges are frequent, the driver calls the office on his two-way radio phone, and asks about the credit status. The girl in the office pulls out the Kardex drawer containing the customer's ledger card and locates the name on the visible margin. If there is a red flag in the holder, it tells at once that the customer is in arrears, and how many months. She checks the record by merely flipping up the preceding cards, and tells the driver what to do. If there is no red flag in the holder, it tells at once that the customer's payments are current, so she instructs the driver to write the charge slip.

On account of the need to maintain close personal touch with the custo-

mers as defense against competition, it is the company's plan to have the drivers call to make deliveries approximately once a month in winter, and every second month in summer. When the driver enters his delivery record, or checks the tank and finds that no delivery is necessary, he also marks a cross through the abbreviation for the month in the visible margin. If any month that should show a cross is blank on any customer's sheet, the manager, on his periodical inspection of the route book, looks for the reason. This is generally apparent on inspection of the delivery record. If not, the driver is ques-

page was devoted to each customer. The old method was so bulky that a complete book was required for each route. With the present visible system, the one book replaces the dozen formerly required by each driver. An "out of gas" call can now be serviced and recorded at once, thus eliminating many omissions which formerly occurred.

The visible system with complete records of customer history has been a great aid in consolidating the routes to build up gallonage and reduce delivery miles. The two-way short wave radio phones with which all company vehicles are equipped have helped



Bulk plant at Kaufman, Tex., appears in background as Reliance delivery and service trucks parade along road in foreground of picture.

tioned. Since the sheets are arranged in the book in the order of their occurrence on the routes, the complete service history of each route, and any irregularities in service, are apparent almost at a glance.

The binders hold 21 sheets in front of each guide page. If the route includes more than 21 customers, the record is continued to the next guide-page division. The total capacity of the binder is about 450 customer sheets. No driver's routes include that many customers, so the single book serves for all of that driver's delivery records. This is a marked contrast with the route book system previously used, in which a complete

further in this milcage reduction, and have eliminated considerable overtime pay. Before the radio equipment was installed, "out of gas" calls which came in after the driver had made his mid-day phone call to the office generally had to be held in the office pending his return in the evening, and then a special trip to the customer's home had to be made. These calls are now relayed to the driver immediately, and he arranges his schedule to make the delivery with the least waste of time, and by the most direct route.

The two-way communication system also enables the managers to maintain closer contact with all

phases of the operation throughout the day. If at the office, they can call any driver at any time. With the managers' cars equipped with phones, all radio conversations between both offices and all operating personnel come through on the speakers, and either manager can call his own or the other office. A further saving effected by the intercommunication system comes from the elimination of long distance phone charges between the two offices. The availability of unlimited interoffice communication without extra cost also results in a reduction of the number of trips from one office to the other which were formerly made for conferences between managers. Most of these trips no longer seem to be necessary.

Balancing Load

The territory served by Reliance Gas Co. presents certain problems which make a good winter/summer balance impossible, and which limit expansion. There are very few farms large enough to justify conversion of gasoline tractors to L. P. gas. The one exception is a 7,000 acre farm served from the Kaufman branch, on which a total of about 45 tractors, trucks, and power driven units have been converted. Deliveries are made into the customer's own storage tank, which has sufficient capacity to take a full 3500 gallon transport load at a time. The Kaufman branch also serves a number of cotton gins, which consume fuel heavily for a short period in the fall and early winter. They are also generally able to serve from six to eight oil well drilling outfits, from whichever branch is most convenient. This goes on the year round, hence offers no means of balancing seasonal loads. Other than these, most of the company's gallonage goes into domestic consumption.

In order to make the most favorable possible showing, and boost the winter allowable, customer tanks are filled to capacity just prior to Sept. 1, which is the dividing point on which the winter/summer ratios are calculated. Correspondingly, fuel is allowed to go down to the safe minimum at the other end of the winter season.

The managers recognize that larger capacity tanks than those present-

ly used would improve their load balance position, and reduce delivery mileage. Offsetting this to some extent, in their estimation, is the greater likelihood of losing customers on account of less frequent contact and the greater temptation for competitors to "sharp-shoot" with special prices for large fills during the slack season. They feel that with the customers' tanks worked up in size to fit their present delivery practices, they have achieved the most favorable condition under the present status.

Market Could Diminish

Another future problem which faces this territory is the probability that the L. P. gas market will not expand. There is actually more chance that it will diminish. Natural gas is plentiful and cheap in the Dallas area. A 20-inch main passes through the long dimension of the Reliance Gas Co.'s territory, and utility service is now available in every town. The L. P. gas market is strictly rural. Up at the Dallas end of the territory, there is a fringe suburban area beyond the mains which is now being served by the LPG dealers, but which will inevitably be supplied with utility gas. This transition zone will no doubt continue to creep out from the city, but it offers an unstable market, and entails much expense in connection with installing and moving tanks for temporary service.

In order to continue the company's growth, the Reliance managers recognize that they must engage in consistent and effective sales promotion work. They are using various advertising media to attract new prospects. During 1951 and 1952 they determined, at considerable expense, that the results obtainable through radio and newspaper advertising in their territory did not justify the cost, because in order to reach their rural customers they had to pay for too much circulation among townspeople who were not prospective users of L. P. gas. The backbone of their current advertising is direct mail, which is sent out by means of an addressograph from the Kaufman office. For mailing pieces, they sometimes prepare their own cards or circulars giving sales points on their own business. They also mail numerous pieces obtained from the manufacturers of the appliances which they sell.

Appliances Are Demonstrated

A good display of appliances is maintained at each sales room. Outlets at close intervals along the walls make it possible to keep many of the demonstration appliances connected, so live demonstrations can be made for hot prospects. One of the outstanding features in each showroom is a Servel Icemaker, which is in constant service turning out ice, and refrigerating cold drinks.

NOW!
2-WAY RADIOS



Yes, all of our fine delivery trucks are now equipped with 2-Way Radios so we can relay your order to the truck nearest you in a matter of seconds.

For **SPEED** be sure to direct all daytime calls to our temporary location
2671 in Kaufman and 2733 in Athens.

Join another **Reliance** service, of course at no extra charge.

RELIANCE GAS COMPANY
BUTANE - PROPANE - SALES & SERVICE
ATHEENS, KAUFMAN, TERRELL, FORTNEY



OUR TRUCKS ARE AS NEAR AS YOUR PHONE

Reliance Gas has found direct mail to be most valuable type of advertising.

The full time salesman, who divides his time between the two branches, works in close coordination with the two managers, who direct his efforts along planned lines to build up volume of gas sales along the consolidated routes, so deliveries per truck mile may be increased. The drivers' primary job is to deliver gas and make collections, but they also turn in prospect cards on customers who could or should have more appliances.

The managers feel that they are making substantial progress toward their goal of increased profits through intensive development of the market in their territory, and in reducing operating expenses. The business is growing slowly but steadily. At the beginning of 1953, they set an objective of reducing the operating expenses a total of \$22,000 for the year. Elimination of the unproductive forms of advertising is helping to reach this goal, but even more progress is being made by a studied effort to do the things which increase the gallons of fuel delivered per mile of truck operation. As the result of both approaches, they are ahead of schedule for the first five months of the year.



Consolidated statewide SERVICE stands alone...

Consolidated Gas Company maintains the only statewide L-P Gas storage facilities in Georgia... to ensure you of ample supplies of GLOGAS whenever you call. A fleet of GLOGAS service trucks criss-crossing Georgia, experienced crews of gas technicians and patrollers stationed in the millions use always available, ready to overcome weather or transportation difficulties to keep your home or farm supplied with magic GLOGAS, the wonder L-P Gas for use beyond the main.

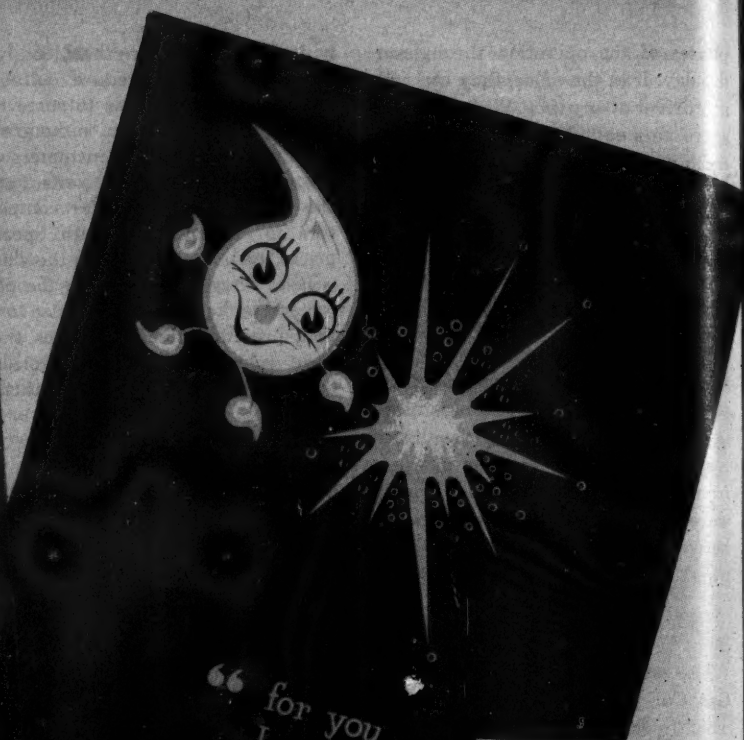
Wherever you live you, too, can enjoy the many advantages of Consolidated's exclusive statewide service. You can always rely on Consolidated, Georgia's oldest, largest and most dependable L-P Gas distributor.

For immediate service, call your nearest **CONSOLIDATED GAS COMPANY** office...

ALBANY	COLUMBUS	NEWNAN
AMERICUS	CONLEY	ROME
ATHENS	PORT VALLEY	SANDERSVILLE
ATLANTA	QUINN	SAVANNAH
BRISTOL	LAGRANGE	THOMASTON
BRUNSWICK	MACON	THOMASVILLE
BUTLER	MANCHESTER	WADSWORTH
	MONTICELLO	WADSWORTH
		WEST POINT

Georgia's oldest, largest, and most dependable L-P Gas Dealer

CONSOLIDATED GAS COMPANY



"for you...
I promise a
glowing future"

Sorry
I missed you!

No one answered when I called, but the attached post card can get me back in a hurry... to take care of any of your needs. Just fill in the card and mail... no postage is necessary. In case of emergency, call me.

Return to: **CONSOLIDATED GAS COMPANY**

CONSOLIDATED GAS COMPANY

GLOWY TURNS "ICE-MAKER"
With the New **SERVEL** Refrigerator
that makes
ICE CIRCLES WITHOUT TRAYS
and puts 'em in a basket *Automatically!*

With this revolutionary new refrigerator you merely reach in a basket and pick out ice cubes... one at a time or a handful. The ICE-MAKER replaces them as used... shuts off automatically when basket is refilled! No bothersome ice trays to refill... none to spill.
Don't wait to see this marvel of modern living. See it demonstrated at your nearest Consolidated office.
Gas or electric models available. Prices extremely reasonable, with small down payment and monthly terms if desired.

Georgia's oldest, largest, and most dependable L-P Gas Dealer

CONSOLIDATED GAS COMPANY



NAME _____

ADDRESS _____

Phone _____

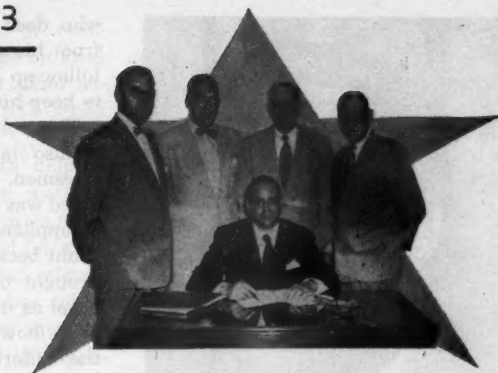
☐ I am interested in knowing more about GLOGAS and Consolidated Service

☐ I am interested in the following appliances:

☐ RANGE ☐ WATER HEATER ☐ CLOTHES DRYER ☐ CUPBOARD INSTALLATION

☐ A. MOUNTAIN AIR-CLIMATE SYSTEM ☐ HOME FREEZER

Telling and Selling Is Key To Success



By Alex W. Beeler, III

WHEN Consolidated Gas Co. of Atlanta, Ga. was formed from five successful independent L. P. gas dealers the move consolidated much more than bulk plants and office equipment. It consolidated policies . . . in service, delivery, accounting and SALES.

Sidney L. Stapleton, Consolidated's genial and capable general sales manager, likes to summarize the sales policy of this growing company with a quotation he picked up years ago. "The elevator to success is out of order," he tells his salesmen, "You'll have to use the stairs!"

Success to Sid Stapleton means but one thing: a satisfied customer. And since customers become satisfied from the combined efforts of salesmen, service, delivery and accurate billing, Consolidated feels that every person working for the company has

a definite sales responsibility. It all starts with the salesman, however, and Consolidated salesmen are sold on the idea of climbing the stairway to success one step at a time. The only equipment needed, the tools of the sales trade, are plenty of facts—about the LPG Industry, about LPG appliances and equipment and about Consolidated Gas Co. With facts on hand about every aspect of the L. P. gas business Sid Stapleton feels that any salesman can find his quota of customers.

Accordingly, the first step taken by a Consolidated salesman is learning the facts himself. Through classes within the division and branch offices, and from representatives of the many companies who supply Consolidated, he learns all he can about what he is selling. Fortunately, the facts about L. P. gas are so intensely interesting, that only the most unimaginative of men can fail to build

up tremendous enthusiasm about his product. Of course, the more enthusiasm he displays in his sales technique, the easier the job he has in presenting facts to his prospective customers.

The next step toward a sale is to approach the prospect with as impressive an appearance as possible: neat dress, friendly manner and confident air. Consolidated salesmen feel that the thousands of satisfied customers they are already serving in Georgia, plus widespread advertising, has introduced their company to most of the potential market in the state, so they like to present themselves immediately as representatives of Consolidated Gas Co.

With such important preliminaries out of the way they then start telling the prospect facts. First they explain just what LPG is, where it comes from, of what it consists. Cost of LPG is compared with other fuels and

A continuous advertising campaign is used to "tell and sell" the advantages of LPG. Samples of newspaper ads and other promotion material is shown below and on opposite page.



Sidney L. Stapleton, general sales manager of Consolidated Gas Co., is a popular speaker at LPG gatherings throughout the south and middle west.

NFPA figures are quoted to assure the prospect that gas is the safest fuel used today.

No sales approach can hope to be successful without telling what the prospect can himself gain from the product. After explaining the basic facts of L. P. gas, Consolidated salesmen tell what LPG can do for the homemaker, the farmer or the industrialist. Its versatility is defined in terms of better and easier cooking, dependable, clean heat, cheaper, more efficient tractor fuel, even, controlled heat for tobacco drying. In regard to appliances and equipment that furnish these qualities to the customer, honesty is the best policy, always. Nothing is claimed for any equipment sold and serviced by Consolidated that cannot be backed up by performance.

After telling what LPG can do for the prospect, the Consolidated salesman assures these advantages by explaining Consolidated's dependable service, statewide storage facilities, factory installation methods. Competition is not knocked because Consolidated feels that its salesmen can better spend their time giving positive facts about their company.

Price is not considered an important factor in selling gas or appliances. Consolidated's policy is to charge a fair price which they can justify by furnishing the very best service available in the state. A few customers may be lost by the low prices of competition, but Consolidated's management knows that the competitor

who does not make enough profit from his sales to support necessary follow-up service can hardly expect to keep his customers very long.

This policy of not selling by price is also most advantageous to the salesmen. Earlier this year Consolidated was able to purchase a number of appliances at a considerable discount because of a new model being brought out. These were sold, unusual as it may seem, at the regular price, however. Instead of pocketing the difference themselves, though, Consolidated passed on the extra profit to the salesmen. As a result, all of the appliances were sold in a short time, customers got their

sales in all divisions and branches. During the spring and summer kitchen appliances and cylinder installations are pushed all over the state, and tobacco curing is emphasized in those branches which lie in Georgia's rich tobacco growing belt. Heating and storage, of course, are played up in the fall and early winter months, while the last contest of the year is generally designed to sell stock on hand to make room for new models.

To relieve monotony and stimulate interest in the competition, Sid Stapleton tries a different method on every contest. Some are based on dollar sales per salesman, others on



No opportunity is overlooked for advertising the name of the company. Prominent display space is used effectively as may be seen on this large trailer which travels throughout the company's territory.

money's worth, Consolidated got a larger profit through larger volume of sales for the period. Salesmen were given a real incentive for climbing the stairs to success. Also, sales of the appliances were a means for bringing many new gas customers to the company, which is the main reason any LPG dealer stays in business.

Continual incentive for the salesmen of Consolidated is provided through sales contests which follow one another from season to season throughout the year. Most of Consolidated's contests run for from one to three months, depending both on what can be sold most easily at different times during the year and what needs to be sold.

Usually during the first months of the year tractor conversions are stressed in those divisions which have a heavy farm trade, and gas

a point system which gives more credit on those items Consolidated is particularly anxious to sell. Every contest has a statewide winner, but in Consolidated's first year a couple of the contests provided secondary prizes within divisions, to keep interest alive in many salesmen who might figure early in the contest that they had no chance for the first three prizes. Monthly prizes have also proved to be a powerful sales stimulant for new salesmen who join the company in the middle of a contest.

Consolidated is not all picayunish in the choice of prizes for its contests. Management reasons that if it is to spur the salesmen to maximum effort, a big spur must be used, and all prizes, which are announced at the beginning of each contest, are well worth working for. So far they have ranged from a sizable check, on which the company pays tax, to a trip for the

winner and his wife to Havana, Cuba, to a new Chevrolet. Whenever possible, Consolidated ties in its contests with similar competitive devices offered by appliance manufacturers, such as the big travel contest offered by Servel Refrigerators last summer.

While some aspects of Consolidated's sales contests may seem extravagant, no one can deny that they have been overwhelmingly successful. During the past year sales of appliances and gas, and of utmost importance, acquisition of new customers, have reached an all time high for all divisions.

Advertising, coordinated closely with sales objectives and efforts, has

numbers. Also, a variety of radio spots were prepared for use on local stations. Television and outdoor advertising have been tried to a lesser extent.

Of more down to earth help to salesmen was the printed material explaining the company and its products. These have been used for giveaways and for direct mail pieces. Then, too, Consolidated has taken full advantage of printed material and ad mats furnished by appliance manufacturers. The advertising budget has been helped greatly by the addition of cooperative advertising funds, which amount to nearly \$20,000.00 a year.

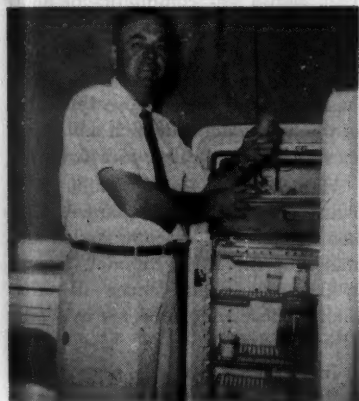
which is a most conservative estimate. This being so, think of the number of contacts made by just five delivery men in the course of a year. Surprisingly enough, just five drivers can meet over 12,000 people in a year's time, which is not to be sneezed at. Although many of these are already customers, constant proof of interest in their welfare keeps them satisfied customers, and their purchases of additional appliances increases their gas load just that much more.

It may be said that salesmen are born, not made, but Carl Coslick has mapped out a program of instruction and inspiration that is doing much to give the lie to this time-worn axiom. Through frequent trips to branch offices for training sessions and the enthusiastic cooperation of branch managers, each of whom is responsible for sales in his office, Coslick is making definite progress in his program. The results are apparent in increased gas sales.

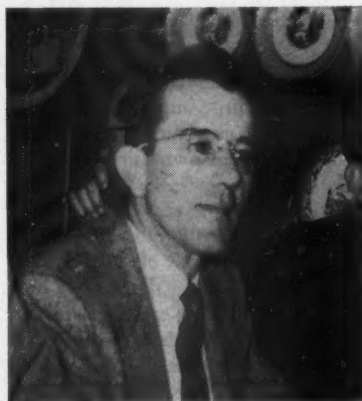
Office employees also play a part in getting more customers for the company. Consolidated's salesmen are the front line troops in the sales picture, but the girls who answer phones, keep books and type are encouraged to give maximum support at all times. Not a contest is developed without including a lucrative incentive for the office personnel, usually in the form of a commission on every prospect furnished a salesman which turns into an actual sale. Since Consolidated's non-sales employees are as enthusiastic about the company as any salesman, most of the prospects they name are already more than half sold when the salesman calls.

Thus, selling in Consolidated Gas Co. is everybody's business, and it continues long after a new customer's first purchase. Service, fuel delivery, billing, the manner in which letters are typed and telephones are answered, all form an integral part of Consolidated's sales program. Such concerted effort has not only increased business and profit but has paid an extra dividend from the satisfied customers themselves. A large percentage of inquiries and new sales come from the friends and neighbors of customers.

The whole cycle from satisfied customers to more satisfied customers is thought of as the wheel of fortune by everybody in Consolidated Gas Co.



W. B. Wright, vice president in charge of sales and advertising, likes to roll up his sleeves and show how to make an effective demonstration of LPG appliances.



Carl Coslick has the challenging job of making salesmen out of "GLOGAS" delivery men, an important phase of Consolidated's successful program.

also played a part in increasing Consolidated's business. Allen, McRae and Bealer, an Atlanta advertising agency with several years experience in the LPG field was chosen to work up an advertising program under the direction of W. B. Wight, vice president in charge of advertising and sales. Soon after the consolidation had been effected, a statewide campaign was launched to familiarize potential customers throughout Georgia with the new name, Consolidated Gas Co., and "GloGas," which is Consolidated's own brand name for the L. P. gas it sells.

In addition to this statewide campaign, which was institutional in a nature, ad mats were also prepared on appliances and cylinder installations for use in daily and weekly newspapers in the territory, with space for local addresses and phone

Consolidated's advertising has been successful and has done the job for which it was intended: furnishing maximum support to salesmen. It is considered strictly a sales tool, and advertising plans are presented to branch and division managers periodically during the year for suggestion and comment.

Probably the most novel aspect of Consolidated's sales policy is the inclusion of every employee in the sales effort. As was mentioned in last month's article, Carl Coslick was recently appointed to work with C. G. Haugabook, vice president in charge of gas purchasing and delivery, in working up a program which is making salesmen out of "GloGas" delivery men.

Consolidated figures that the delivery man on his truck will see at least ten customers and prospects a day,



exclusive

PART 2

Servicing Control Equipment

By Carl E. Smith

Manager of Service Division
Minneapolis-Honeywell
Regulator Co.
Minneapolis, Minnesota

NO thermostat can do a good job of temperature control unless it is located where it will measure the temperature of the room properly. A thermostat should be located on an inner wall in the living room where people in the home spend most of their time. It should be located about five feet from the floor where it can best control temperature and so that it will be at eye level for changing the temperature settings.

There are several poor thermostat locations to avoid. If possible, it should not be mounted on a wall near the kitchen where it would pick up extra heat and result in the rest of the house being underheated. It should not be in an entrance hall, behind an open door, or behind furniture. Concealed pipes or ducts in the wall must be avoided so as to eliminate sources of heat that would tend to satisfy the thermostat below the temperature setting and cause the house to be chilly. For the same reason it should not be mounted where it will be in the direct rays of the sun or where it will receive warm air directly from a register, convector, or radiator. You may find occasionally that the housewife has rearranged the furniture and moved a lamp or radio or some other source of heat immediately below the thermostat. This location must also be avoided, or appliances removed. Cold air sources—such as cold outside walls, outside doorways, or the prox-

imity to large or drafty windows should also be avoided.

Selecting the Location

A good general rule for you to follow is to look for two or three good locations before you discuss the location with the customer. Pick out two or three in your own mind and then ask the customer to choose. This will avoid letting the customer select a poor location that you would have to try to argue him out of (Fig. 1).

When installing a thermostat in a new home, use new cable unless you know for sure that the existing cable was only recently installed and is in good condition. The hole in the plaster through which the cable runs to the thermostat should be plugged to prevent drafts from affecting the thermostat. The wiring should be run carefully and the connections made color to color if it happens to be a three wire system. Be especially careful to make good splices as many nuisance service calls or erratic operation result from poor splices. It is a good practice to scrape wire well at the ends and solder splices. This is especially important in the case of self-powered systems.

On some installations, where there is reason to believe that the customer will later prefer an electric clock thermostat instead of the manual model, many dealers gamble the minor cost of pulling up two additional wires to provide low-voltage power for the clock, should the homeowner decide to convert to automatic day-night control.

It is always advisable to install the thermostat first and let it reach room temperature before checking the operation of the system. Before putting the cover on the thermostat, check

the heater plug and make sure it is the right one for the valve. Otherwise you would get complaints of short cycling if too much heat is developed. On the other hand, if too little heat is available because of the wrong heater plug, you will lose the value of the heater action which will result in wide swings in temperature.

Honeywell has a convenient slide rule that shows at a glance which heater plug is recommended for many of the most common Honeywell controls and those of other make. These slide rules are available free of charge.

In checking out the system, if a longer on-time is needed (such as on one pipe steam to insure complete steam distribution on each burner operation) widen the thermostat differential about one-half degree at a time until ample heat distribution is assured. Some thermostats, including the new Honeywell Round model, T86, have adjustable heaters that electrical resistance can be varied, to match the type of primary control used.

Thermostat Calibration

Because of the difference in construction between different types of thermostats, you should study the instruction sheet in order to find the location and use of the adjustments for calibrating the thermostat if one gets out of calibration (Fig. 2). In general, thermostats that have heaters give shorter and more frequent burner operations. They are calibrated to start the burner when the room temperature falls to the scale setting and to stop the burner when the room temperature plus the heater action raises the temperature of the

thermostat by the amount of differential. The actual operating differential of a thermostat that is in proper adjustment and has the right heater element in it, is always considerably less than the mechanical differential that you would measure by starting and stopping the burner when you move the temperature setting up and down scale.

Calibration Adjustments

While the different makes and models vary, here are the steps you take to calibrate most thermostats: move the temperature setting up scale slowly until it starts the burner. If the thermostat is in calibration, it will start the burner when temperature indicator reaches the same setting as the thermometer reading of the thermometer. If the "on" point of the thermostat does not agree with the thermometer, set and lock the temperature setting lever or dial to agree with the thermometer reading. Then turn the calibration adjustment slowly until it starts the burner. Unlock the temperature setting lever or dial by loosening the screw. Until you learn how to calibrate any particular model, you should read the manufacturer's directions in the instruction sheet that comes with the thermostat.

Remember: don't let heat from your hands or breath get on the sensitive temperature element.

Customer Instruction

Unless your company has periodic service on the jobs that it sells, you should give the home owner some of the simple instructions on the use and care of the thermostat. The homeowner, generally unfamiliar with his heating system and controls, is more aware of his thermostat than any other portion of his heating system. If it is an open contact type, you may want to show him how to clean the contact at the beginning of the heating season. You should caution him definitely against the use of any abrasive material in cleaning the contacts or of springing the delicate bi-metal or metal bellows used as a temperature sensing mechanism. A hard surface writing paper or business card moved back and forth between the contacts is the best material for him to use. Some thermostats are provided with a plastic shield to minimize dust, lint and other foreign matter from depositing on the con-

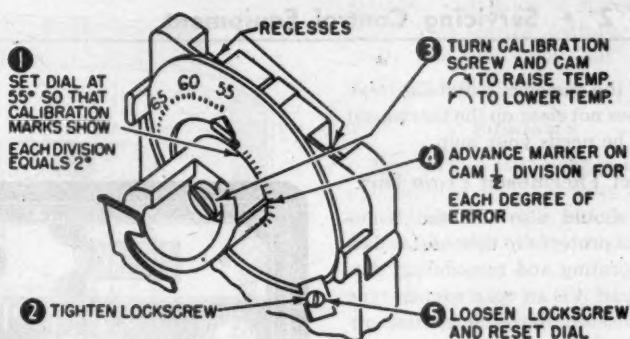


Fig. 2—Typical thermostat calibration procedure (Honeywell TM811).

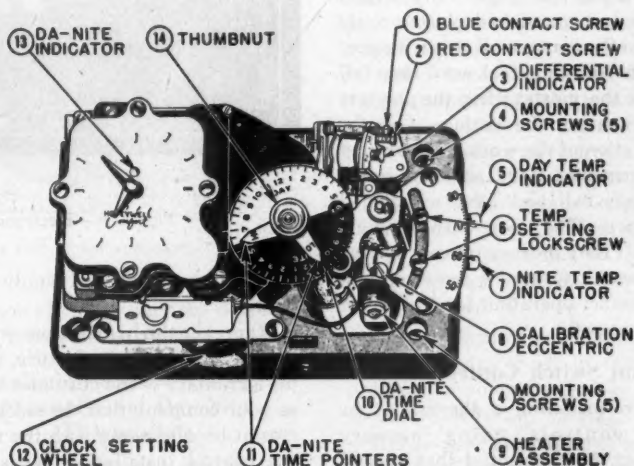


Fig. 3—Mechanism of an electric clock thermostat (Honeywell TM850).

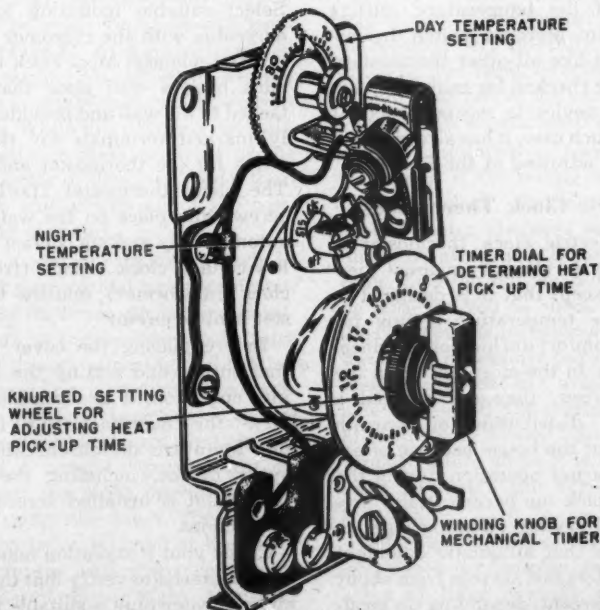


Fig. 4—Mechanism of a semi-automatic clock thermostat (Honeywell TM801).

PART 2 • Servicing Control Equipment

tacts. If the customer's first-aid treatment does not clear up the thermostat trouble he needs your help.

Protect Thermostat From Dirt

You should also tell the homeowner to protect the thermostat during decorating and remodeling, particularly, if it is an open contact type of thermostat. Many thermostats returned to the factory for repair were needlessly damaged by a spot of paint or plaster on the contact. This is a good point to keep in mind in case the house is still under construction where dust, paint and plaster could get into the contacts. If it is a magnet type thermostat, steel wool may fall into the thermostat when the painters are preparing the surface. Get the cooperation of the workers to protect the thermostat. It will save you many a service call and keep a satisfied customer. The new Honeywell Round (T86) thermostat uses a mercury switch to assure positive, dust free contact operation for the life of the thermostat.

Mount Switch Controls Level

When installing a thermostat or other controls using mercury switches, it is essential that special care be given in mounting the device in a true up-right position. This enables the tilting action of the mercury switch to respond properly to the action of the temperature sensing mechanism. Mercury switch thermostats, just like all other thermostats, should be checked for calibration unless the device is reconditioned or new. In such case, it has already been carefully adjusted at the factory.

Electric Clock Thermostats

The electric clock thermostat is similar to the ordinary manual thermostat except that it is designed to lower the temperature setting for greater comfort during normal sleeping hours. In the morning, when the family arises, they are assured a thorough distribution of warmth throughout the house because of extended burner operation during the morning pick-up period. It also provides fuel savings. Heating authorities agree that automatic day-night control offers fuel savings from about 10 to 21 percent, depending on locality, type of construction, efficiency of

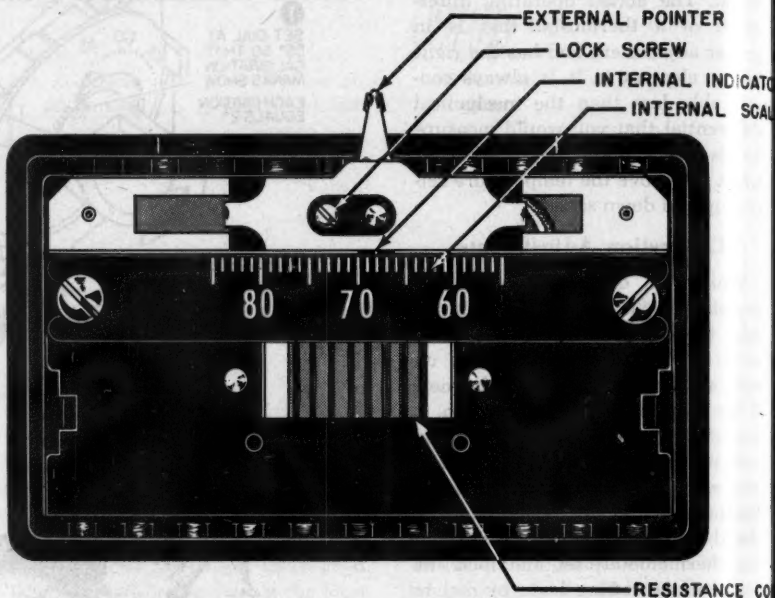


Fig. 5-A—Electronic Weathercaster with cover removed.

the heating system, and family living habits.

Wherever the homeowner is receptive to this automatic feature, it is to the advantage of the customer as well as your company that the clock thermostat be sold along with the rest of the control installation or as a replacement (Fig. 3).

It is advisable to let the electric clock thermostat reach room temperature before starting the system. Select suitable mounting locations agreeable with the customer as outlined previously. Most clock thermostats have a wall plate that is attached to the wall and provides plainly marked terminals for the lead wires for the thermostat and clock. The clock thermostat itself then screws into place on the wall plate, automatically making contact for the low-voltage clock circuit (from the clock transformer), and the thermostat control circuit.

Before placing the cover on the thermostat, and setting the system into operation, it is advisable to review the manufacturer's instruction literature, double-checking that every device, including the clock thermostat is installed according to instructions.

Check your installation manual or other material to verify that the thermostat heater plug is suitable for the gas valve used in the system. The

Honeywell TM848 and TM850 Chronotherms use a universal heater in the clock circuit which is independent of the type of valve used.

Be sure that the clock transformer is of the type recommended by the manufacturer, and is of the voltage and frequency used in your area. It is extremely important to use the right transformer for the electric clock so as to get the right amount of off-set and to avoid possible damage to the clock itself. In no case should you use the transformer that operates the gas valve, to also operate the clock. This may possibly damage the clock and can lead to several types of trouble, depending on how the connections are actually made. For example, it may cause the valve to go open immediately, with no control whatever from the thermostat, or it may put a dead short on the transformer, and so on. By using the separate transformer provided for use with the electric clock thermostat, you can avoid trouble.

Calibrating Clock Thermostats

An important point to remember is that electric clock-type thermostats are calibrated at the factory to make allowance for the heat from the clock motor. If it is necessary to check the calibration, you should be sure the clock has been running with the cover on at least two hours. A good

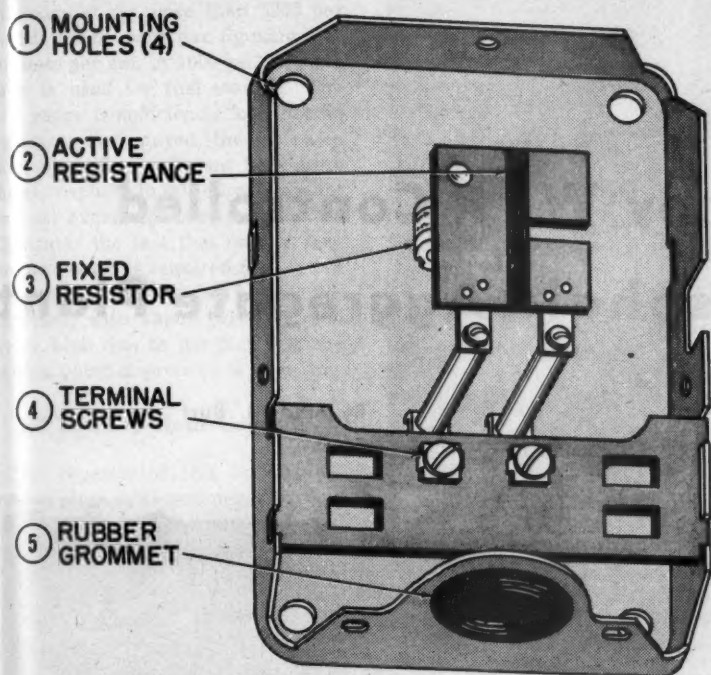


Fig. 5-B—Electronic manual thermostat with cover removed.

policy is to review the manufacturer's instruction sheet or service manual for proper calibration procedure.

Be sure to tell the owner how to set the clock if there has been a power interruption. Never try to turn the hands themselves because the twelve hour dial on the clock must be synchronized with the twenty-four hour dial on which the fingers are located for setting the nite and day-time settings that lower and raise the temperature. In re-setting the electric clock, the home owner may set it on the wrong twelve hour cycle. Show him the little indicator in the face of the clock which indicates if it is on the night or the day cycle.

Finally, you should instruct the customer on how to set the temperature indicator and how to change or postpone the night set-back if he so desires.

Another point that you should stress with the homeowner is that the low-voltage transformer installed for the clock is not to be used for other low-voltage electrical devices such as door bells or electric trains. Most manufacturers have a simple instruction booklet attached to the clock thermostat that will simplify your job of instructing the customer in its operation. It is always a good plan to point out the instructions in

the book as you go over the details in your verbal instructions.

Installation and Servicing of Manually Set Day-Nite Thermostats

Another convenient and fuel-saving type thermostat is the manually set day-night model that has a mechanical spring-wound timer to adjust the night set-back period according to personal requirements each night (Fig. 4). At a pre-determined time, morning pick-up of the heating system is established for the following day. While this device is not fully automatic, it combines most of the convenience of the clock model thermostat, and affords all of the comfort and economy.

This model is installed similarly to the ordinary manual type thermostat. Because its timer mechanism is mechanical, it requires no clock transformer or special wiring. Calibration and servicing is similar to conventional manual thermostats, except that it must be noted that on the TM801 a separate temperature adjustment for night operation is located under the cover. The thermostat can be maintained at the lower temperature setting for periods up to 11 hours, day or night. A positive "off" switch is built in to provide

complete shut-down of system if desired. This switch feature can be easily removed when "off" feature is not required.

Summary

Now let's go over some of the common service calls that were listed at the beginning of this article and see where the thermostat might be involved.

First—no heat. Check the fuse for the burner to make sure it is okay. Then, check the thermostat. If it is an open contact thermostat be sure that the contacts are clean. Look for a broken wire or a poor splice somewhere. These are sometimes tricky to find. If the trouble turns out to be something that is not simply a dirty contact or broken wire you can find it more quickly by using a process of elimination. Jumper the thermostat terminals at the valve to see if the valve operates. Then jumper the terminals at the limit control and finally at the thermostat. This will tell you if the trouble is in one of the units or the wiring between the pair of units involved.

Second—burner won't shut off. Is the thermostat stuck in the closed position for some reason? Is there a short circuit in the wiring?

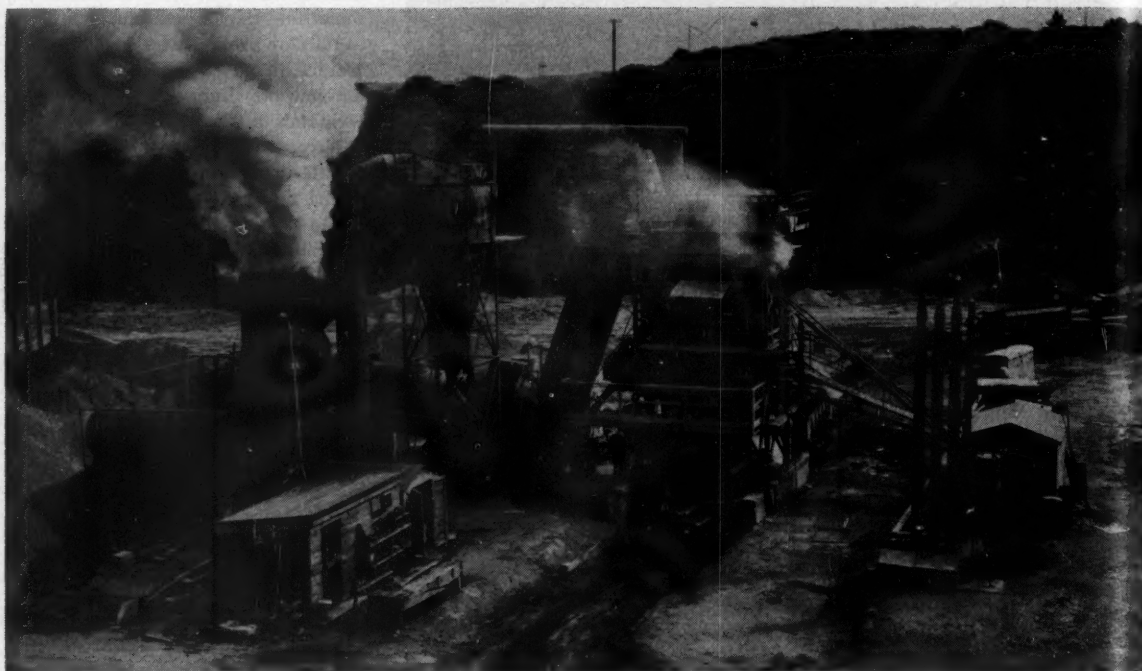
Third—poor regulation of temperature. The first thing to check is the calibration of the thermostat, following the instructions for the particular type of thermostat involved. If it appears to be in calibration but is giving poor control of temperature, recheck the location very carefully. You may find that it is being affected by heat or cold from one of the sources mentioned when we discussed location.

Poor regulation of temperature will result if the wrong heater element is used. Thermostats with proper heater elements are usually furnished along with the valves that come with the burner, but it would be wise for you to check it against the chart on the instruction sheet for the valve or against the heater element tables that are available. The new Honeywell T86 thermostat uses an adjustable heater and will give proper results when it is set on the scale to match the type of valve involved.

(The next of this series of articles will cover the installation and servicing of limit controls and safety pilots.—Ed.)

LPG Saves Money With Controlled Heating for Asphalt Aggregate Plant

By Fred M. Burt



Overall view of 80-ton/hr. asphalt aggregate mixing plant. Aggregate from left feeds into inclined dryer, thence up elevator for feeding into mixer above truck, where it blends with hot asphalt in automatic weighing and mixing process.

THE modern trend in asphalt paving plants is to eliminate steam boilers with their high first cost, maintenance cost, and high attendance and operating cost.

In the old plants, the major part of the boiler capacity is used for atomizing steam for the oil burners on the aggregate drier and heater, which involves a relatively short period of daytime operation. Usually the steam is used also for heating the asphalt storage tanks.

With properly heated fuel oil, the firing of the aggregate drier and

heater can readily be handled with gas burners, using propane or natural gas, the former in this instance.

The installation herein described is used to displace the steam for the asphalt storage tank heating. It also serves to heat the fuel oil for the aggregate drier and automatically controls its temperature without need of supervision. Higher efficiencies result throughout, in addition to the reduced first cost, maintenance, and attendance costs.

Sky Line Quarries, close to Lower Crystal Springs Reservoir in the pen-

insula south of San Francisco, is a combined operation of quarrying aggregate for concrete, plus a black mix plant for asphalt concrete (asphalt aggregate). In the asphalt aggregate plant, this revolutionary new system has been installed for heating and heat maintenance of asphalt in six 10,000 gal. and one 5000 gal. underground storage tanks. It was designed and installed by Heat and Control, Inc., of San Francisco, to provide a very close heat control along with marked fuel consumption economy. In full daily operation, the fuel

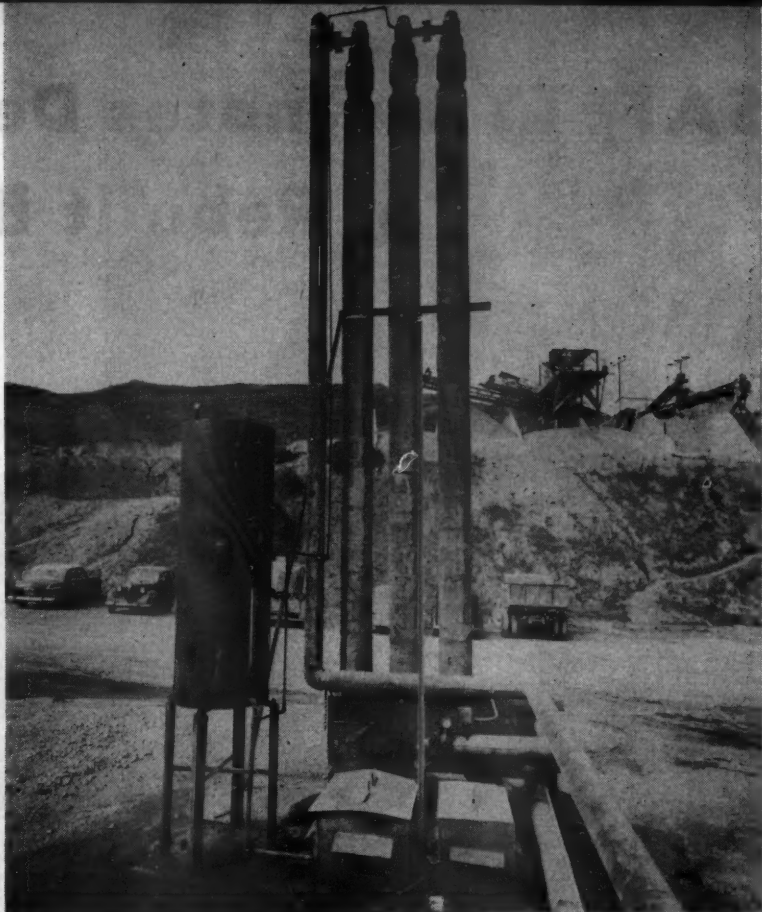
bill runs at no more than \$200 per month, for propane gas, figuring it at 10 cents per gal. A 1000-gal. propane tank is used for fuel storage. The fuel usage is sufficiently low that no vaporizer is required, the storage tank absorbing sufficient heat from the atmosphere in this climate so that no heat exchanger is required. This illustrates the fact that only a very simple system is required for the use of propane gas in such a heating application, with vapor pressure relatively high due to the fact that the boiling point of propane is very low.

80 Ton Per Hour Capacity

The capacity of this hot asphalt mixing plant is 80 tons per hour. The asphalt, of course, is delivered hot in insulated tank trucks and is discharged into the various insulated storage tanks (Picture 1). In each tank, hot oil circulates through the asphalt in 2-in. pipe lines to impart heat to the asphalt as required to maintain it automatically at any desirable temperature up to 300° F. The heated circulating oil is a heat transfer oil of the type supplied by most of the major oil companies. It is maintained at a temperature of about 400° F.

For oil circulation, there are two 50-gpm Gould Pumps, one active, the other a standby (Picture 2). Three Bryant Coil Cage Burners, each with a firing input of 200,000 Btu/hr, fire into the bases of three 22-ft. high heating chambers. The hot products of combustion are carried upwards in 4-in. diameter center pipes, with vents at the tops. Heat is transmitted to the oil which surrounds these combustion chambers in a 6-in. diameter outer pipe which has weather-proofed, 2-in. thick Fiberglas insulation. The total of 600,000 Btu/hr heat input provides for a minimum of 400,000 Btu/hr heat output. The oil pressure in the heating system, as indicated by a gauge at the pumps, should be maintained at about 20 psi. A heat control at the burners provides for the proper fuel input to maintain the proper oil temperature (approximately 400° F).

Besides the heat control at the burners, the tanks have Partlow thermostats and General Controls hydro-motor valves, combined with a piping system which provides for either the flow of hot oil through an asphalt



Oil heating units with pump housings below and expansion tank at left. Oil returning from asphalt tanks is pumped upwards through heater at right, over and down in next one, then back up in third, to leave at top, entering hot oil line enroute to tanks. In background, on bank, is aggregate production operation: quarrying, crushing, conveying and screening.

tank or by-passing the same in order that the pre-set, desired asphalt temperature may be maintained in each of the tanks.

Another advantage of this heating system is that insulated hot oil lines can be run to supply heat for the fuel

oil heater, for the aggregate drier, or to any other point where heat transfer is desirable. From each of the asphalt storage tanks, 2½-in. lines run to the mixer. Valve arrangements allow for pumping the asphalt from any one, or more, of the tanks.

Vertical oil heaters (far right) with pipes running from them to feed heat transfer oil into each asphalt storage tank (buried) and return oil for re-heating; note pipes from tanks to AC mixer, to carry hot asphalt.



SAFETY Keynotes Design of Rebuilt Bulk Plant

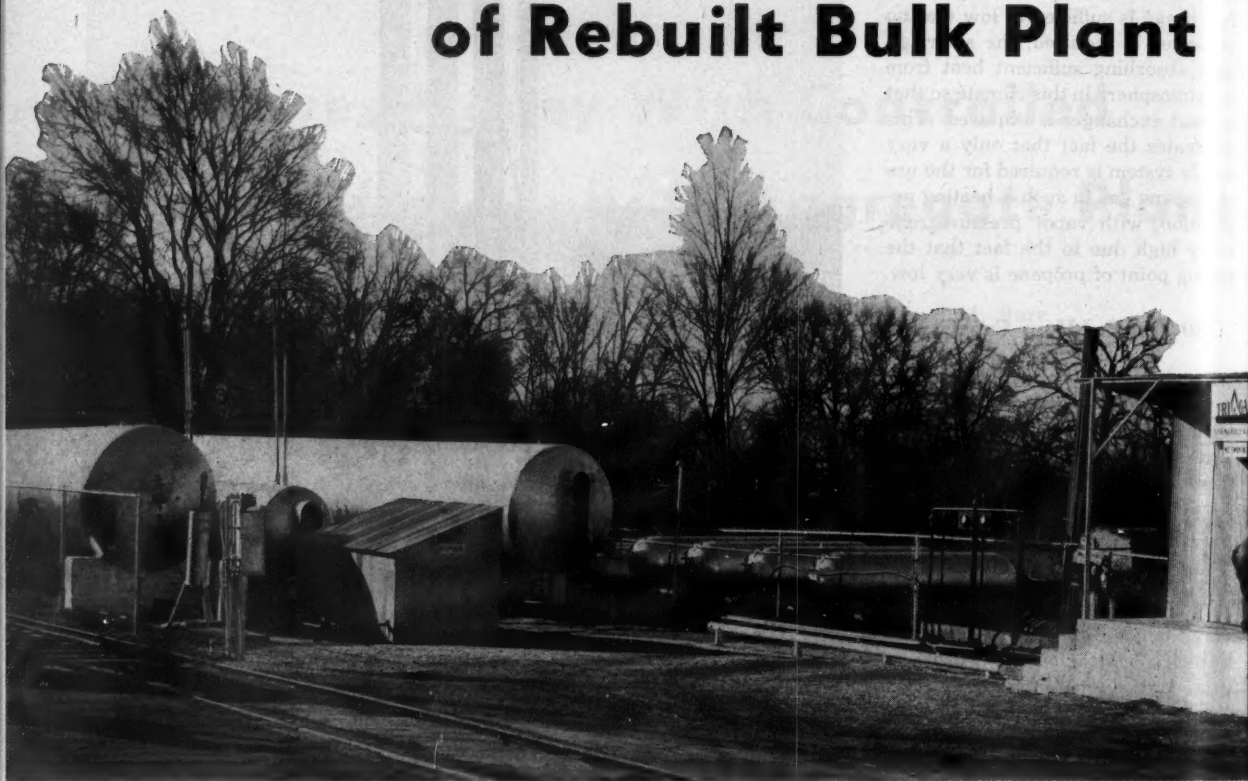


Fig. 1. Main storage tanks shown at left — 19,000-gal., 6000-gal., and 24,000-gal. At right can be seen four of the 16 one thousand-gallon tanks.

By Ernest Fair
Field Editor
Butane-Propane News

PROBABLY most LPG bulk plants have grown step-by-step into their present forms and no doubt many distributor-dealers would welcome a chance to redesign their plants to care for the enlarged operations not foreseen when they first started in business.

This opportunity came to Tri-Gas of Springfield, Inc.,* Springfield, Mo., when an accidental fire destroyed its storage facilities.

"Considerable benefit resulted," recalls L. C. Fritts, president and general manager, "as it put us in a position to start from the ground up and build the kind of bulk storage plant we have always wanted, and to work into it some of the ideas we had dreamed up—with the insurance company carrying part of the load."

The result is shown in the accom-

panying pictures where everything is aboveground and easily accessible, and where a number of ideas have been developed to permit speedier and safer handling of gas as well as insure safer storage.

Only the smallest of buildings are used where weather protection is desired, and each unit of the plant has been kept separate from the other. Three main tanks (19,000-gal., 6000-gal. and 24,000-gal.) and sixteen 1000-gal. tanks are all connected with piping above the ground. Every joint of the piping is welded and all valves are ACF plug types insuring free flow at all times.

The sixteen 1000-gal. tanks are set up away from the main tanks and serve an auxiliary purpose. These are shown to the right of the main tanks in Fig. 1. On the extreme right is the bottled gas building and what office space is needed, as well as a storeroom for tools and small equipment.

This unit has been built on con-

crete blocks to truck bed level to reduce lifting of the heavy metal "bottles." The building has an all-



Fig. 2. Electric switches and telephone are located in this metal cabinet at shoulder level where operator can keep eye on any part of the plant.

*This is the second article covering the operations of Tri-Gas of Springfield, Inc. The first appeared in the July issue and covered their "Metered Gas" plan.

weather canopy and is constructed of sheet metal.

The small building in the center houses the pumping unit which is controlled by a pressure switch mounted on the pump house wall, making the installation explosion-proof, according to Mr. Fritts. When pressure in a car drops to 20 lbs. this automatic switch cuts off the Brunner compressor.

"We built this feature into the pumping unit as a safety factor against such explosions," Mr. Fritts explains, "because it's almost impossible for any human being to keep his eyes on a pressure gauge, the pump, lines and a car at the same time. In this way the man doing the unloading doesn't have to keep his eyes constantly on a pressure gauge and can do a better and smoother job of moving the gas from the railroad cars."

Another safety feature and one providing a sizable reduction in building costs was the installation of electric switches, meters and a telephone in a metal cabinet at shoulder level shown in Fig. 2 and to the left in Fig. 1. From this cabinet, incidentally, the operator can keep his eye on any part of the plant while he answers a telephone call. The cabinet is mounted on a heavy metal pipe which provides a ground for the electrical units. Circuits are all enclosed in conduit and lead to the ground so that there are no wires

overhead anywhere within the storage plant area, which assures an additional safety factor. Two metal doors on the cabinet can be closed and locked at night to prevent vandalism.

The alcohol-injector unit designed for the Tri-Gas plant installation is shown in Fig. 3. Its use equalizes the pressures in the feed lines through the use of a cyclops shown in Fig. 4 which regulates the alcohol flow from the 23-gal. tank above. The Superior menthol sight gauge being pointed out in Fig. 4 is connected as shown to the feeding lines and may

be regulated to adjust drip desired.

Fig. 5 shows truck filling post and arrangement of fixtures directly behind the heavy pipe rail imbedded in the ground to prevent trucks backing into the header arrangement. Hoses on filling posts are the exact length required to reach the trucks, and, being shorter, hang free, which results in less wear on hose and valves since they never touch the ground.

The two hose and header pipe leading to them are painted different colors, with red for liquid and green for vapor gas so that no mistake can be made in loading. Gauges for each line are mounted on a board above eye level which can be read easily from either the ground or atop the truck being loaded. Switches to control pumps in loading are affixed to a panel at the right over which a "No Smoking" sign is painted. All are enclosed in a box which can be locked.

Ample space for movement of personnel or vehicles is provided throughout the entire area without crowding, as may be seen in Fig. 1, and access from two sides is eliminated by a heavy woven wire fence mounted on metal posts and top rails.

Consumer tanks are unloaded from the same trackage on a dock now under construction on the opposite side of these tracks so that they may be handled easier and not interfere with any unloading or loading of gas, and also to prevent any tanks which may slip from falling into the storage units and damaging them.

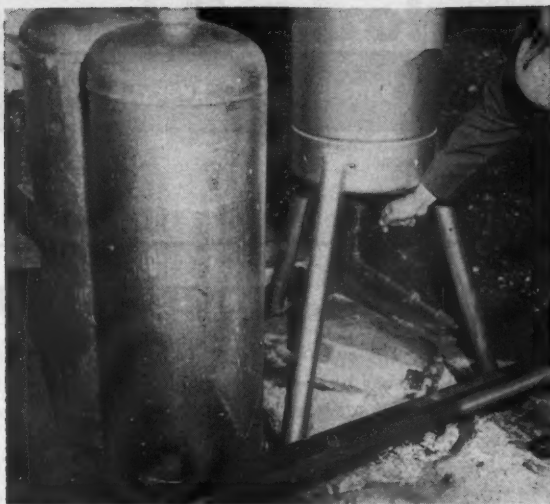


Fig. 4. Menthol sight gauge regulates drip of alcohol from alcohol injector unit into feeding lines.

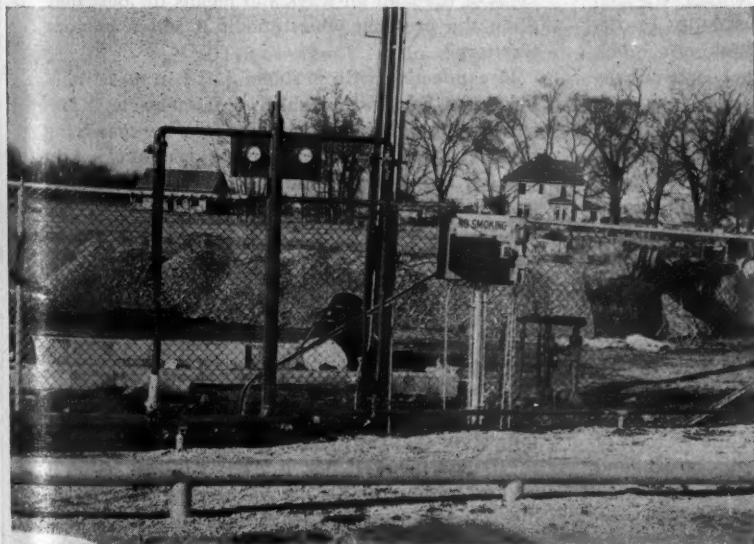


Fig. 5. Heavy pipe rail imbedded in ground prevents trucks from backing into header installation when loading. Filling hoses are long enough to reach trucks and short enough to hang without touching ground.



Let's make SAFETY Everybody's Business

No. 11

Suggested Program for Safety Meeting

- 1 — Take the roll of those present. Note the absentees.
- 2 — What has happened in connection with the safety suggestions and improvement projects suggested at past meetings? Give progress report, extending credit to those entitled to it.
- 3 — New business — invite additional suggestions for improvement of plant and procedures from safety standpoint. Schedule action on those selected for adoption.
- 4 — Discuss "Let's Make Every Fuel Delivery Safe", which appeared in the November issue.
- 5 — Announce date, study assignments, and special assignments for the Fire Prevention and Fire Control meetings which will be the next two on the schedule. We suggest that you invite people in from the local and county fire departments to participate in these programs. They might give valuable help, particularly in giving demonstrations.

DISCUSSION GUIDE FOR "Let's Make Every Fuel Delivery Safe"

This is strictly your baby—there are no outside sources of information which know as much about it as the people who are doing it every day.

The greatest hazard in connection with any of these operations that are repeated constantly is that the men on the job may become so accustomed to doing the operations safely and seeing nothing happen that they may relax their vigilance and fail to notice things that are going wrong. We suggest that you try to offset this possibility by developing in your men the habit of taking a quick look around the location where fuel is being delivered to see that everything is right.

Why not, right here, with the help of the employees, draw up a check list of things about which the driver should be sure before he starts to change cylinders or connect the hose to the bulk tank? Every experienced driver can tell of incidents that have occurred in his work that either caused trouble because he had not noticed them, or did not cause trouble because he saw them and took the correct action.

As the result of this discussion, your organization can have its own check system for quick inspection of customer locations. We suggest that it be drawn up in detail, made part of the records of this meeting, posted on the bulletin board, and copies supplied to each man who is now or may soon be engaged in delivery work.

Problems 2 and 3, which appeared on page 86 of the November issue, relate to a situation which

may not be present in your community. We suggest that you give it full consideration anyway, because it may become a problem in your territory at any time, and it is a good idea to be prepared to handle it. We consider that there is no known way to handle this situation as safely on a "cash and carry" basis as through a trained and safety conscious dealer's organization. Why not draw out the ideas of the staff on ways and means for best handling the problem when and if it arises in your territory?

In connection with problem 5, if you make bulk deliveries, why not establish a "step-by-step" procedure, if you have not already done so, specifying the order of the various operations involved in making the delivery into the customer's tank. A standard procedure which might be written elsewhere could be wrong for your operation due to differences in equipment on various bulk delivery trucks. The sequence should be right for your particular trucks, and the men will remember and follow it more faithfully if they work it out for themselves, understanding the reason for each step and its place in the sequence.

Do you have a similar step-by-step procedure for unloading fuel into your storage, and for loading the bulk trucks? If not, it is a good idea to set it up. At various places we have seen these procedures, written up and sealed against the weather, posted where they will do the most good near the controls in bulk plants.

The Prevention and Control of L. P. Gas Fires

By Carl Abell

LIQUEFIED petroleum gas is the safest fuel there is, as long as it is kept properly confined, and burned under control. The trouble starts when it escapes from confinement, and burns without control. This assignment will be devoted largely to discussion of how to keep the gas from getting out of confinement, and what to do about it if it does.

In beginning the study of the prevention and control of L. P. gas fires,

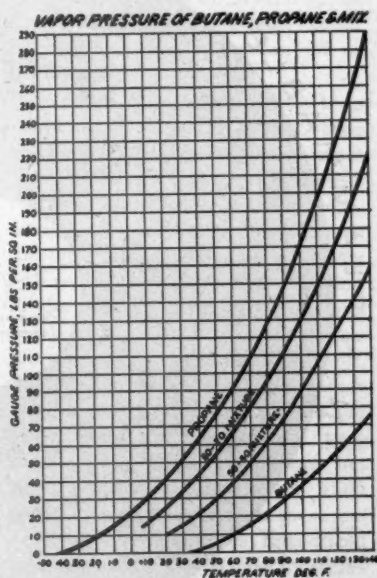
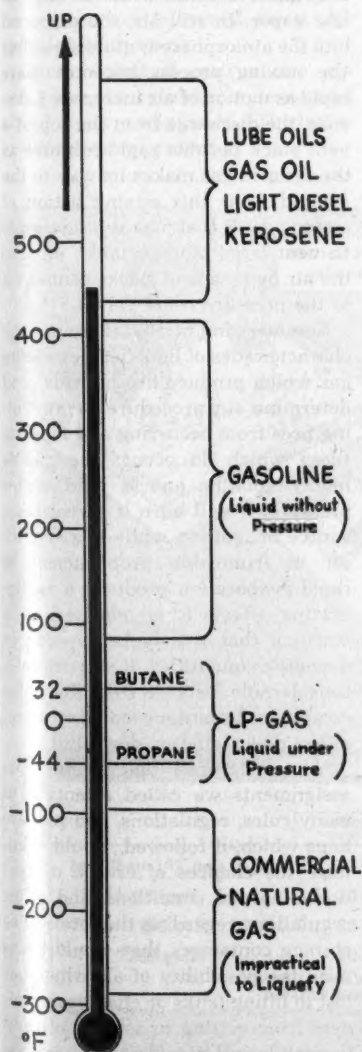
it will be useful to review the first assignment in this Safety Series, so you may have clearly in mind the nature of LPG, and will understand how it will behave in relation to any fire in which it is involved, either as a cause or as it is affected by the heat of fires from outside sources, in the inception of which it had no part.

L. P. gas is, as you will recall, composed of butane or propane, either separately or as a mixture, and sometimes containing a little iso-butane. These are petroleum products, with characteristics which place them in the interval between gasoline and natural gas. In the free state, and at temperatures above freezing, all of these ingredients are gases. Butane has a boiling point of 32 deg. F. Above this temperature it is normally gaseous, but at lower temperatures it becomes liquid. The boiling point of iso-butane is 12 deg. F., while that of propane is -44 deg. F. They are liquefied at the point of production for convenience and economy of storage and transportation, but may only be held in liquid form at normal temperatures by confining them within closed steel containers. Since the pressures that these products develop increases as temperature rises, it is necessary to provide containers of high strength, capable of withstanding the pressures developed as the result of any normal temperatures at which they may be stored.

In order to prevent the containers from bursting under the pressure that might be developed if exposed to abnormally high temperature, they are designed with approximately four or five times the strength required for normal storage pressures. It is conceivable that under conditions of extreme heat the internal pressure might become sufficiently high to burst even this over-strength container. Should this happen, the entire contents of the tank would be released instantaneously, causing the worst possible con-

dition from the standpoint of fire hazard. To prevent the tank from bursting, it is equipped with one or more pressure relief valves, which open at pressures below the limit of the tank's strength to discharge part of the tank contents, and thus maintain pressures within the safe limit of the container.

From the standpoint of fire hazard, the tank is going to lose some of its contents if it gets too hot. The pressure relief valve is there to prevent the loss of all of the tank contents, but we also take precautions to install it so any possible escape of fuel will be held to the lowest limit. The relief valve is installed in the vapor space of the tank so only vapor will be discharged. Allowing liquid to escape would release many times as much fuel, and multiply the hazard tremendously. It is the hazard of discharging liquid instead of vapor that makes filling tanks beyond the legal "filling density" a highly dangerous practice. No LPG tank should ever be over-filled under any conditions.



Differences in pressure of butane and propane affect the design and safety relief valve settings of containers.

L. P. gas will burn only when mixed with air in certain proportions. The flammable limits, within which combustion will take place, are given in table 1. Since most L. P. gas is a mixture of butane and propane, we must consider that the range of flammability includes the highest and the lowest limits for these products.

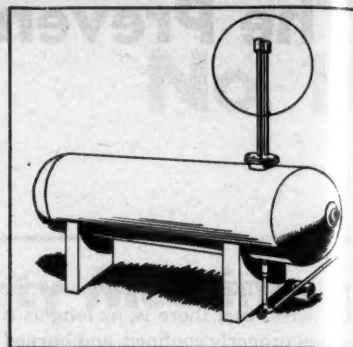
If you ever need to fight a fire in which LPG is involved, or must handle a situation in which gas has escaped but has not been ignited, you are not going to wait to analyze the mixture of air and gas to determine their proportions. But you must realize that no gas that escapes into the atmosphere is ever safe until it is diluted beyond the lowest limit of flammability. The flammable mixture will burn if ignited, and the mixture that is "too rich to burn" must pass through the flammable range before it can be regarded as harmless. It is on the flammability characteristics that most of the successful methods of prevention and control of L. P. gas fires are based.

Table 1
Flammable Limits of L. P. Gas in Air
Given as % of Gas in Air-Gas Mixtures

	Propane	Butane
Lower limit	2.4%	1.8%
Upper limit	9.5%	8.4%

Detecting L. P. gas after it has escaped is important in preventing fires and explosions. In the vapor state, it is almost invisible. Like any other volatile substance, its rapid evaporation produces a refrigerating effect, causing condensation of atmospheric moisture, which is visible at the point of escape, and appears much like a jet of steam. This fog may linger and drift with the escaped gas, gradually disappearing into the air. As an aid in detecting the gas, odorants are used to give it a distinctive and unpleasant odor. This odorant is so powerful that the normal individual can detect escaped gas by its smell in concentrations as low as one tenth of the lower limit of flammability. The odorant is a warning—if you can smell it, be careful. You can not tell from the odor whether or not the gas is present in flammable quantities, so the only sensible course is to consider that it is dangerous until you are sure that it has been shut off at the source and diluted below the danger point.

All L. P. gas is heavier than air. Propane is 1.5 times as heavy, and butane and iso-butane have twice the weight of air. When released into atmosphere, they tend to settle to the ground, and unless rapidly dispersed

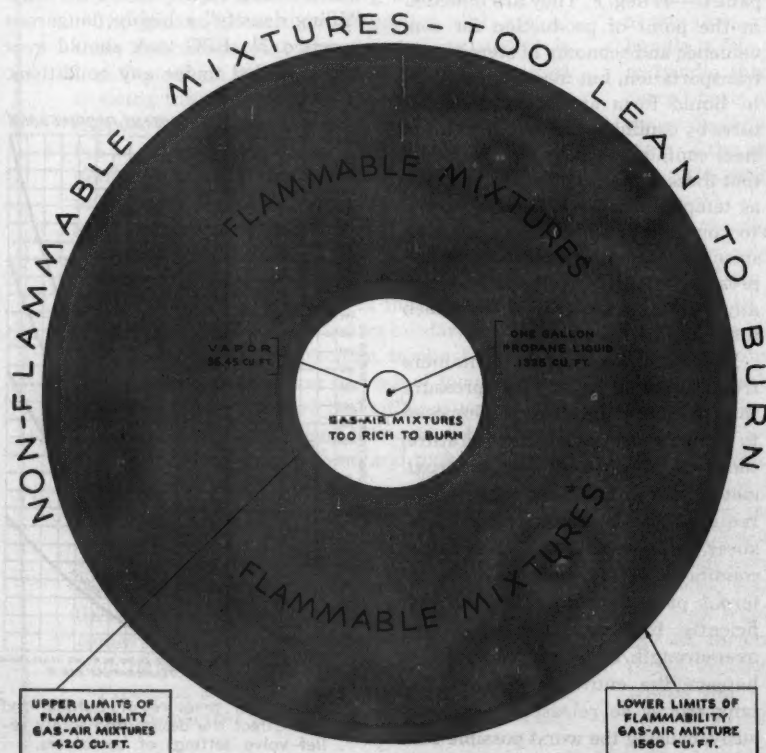


High vent stacks are used on large storage tanks to encourage dispersion of discharged gases below flammable limits before reaching the ground.

by moving air, they will flow down hill either along the surface, or into basements or any other hollows that may be in the direction of the drift. In these respects the behavior of L. P. gas is identical with that of gasoline vapor. In still air, the dispersal into the atmosphere is quite slow, but the mixing process becomes more rapid as motion of air increases. Likewise, the discharge from the top of a vent stack permits rapid mixture as the escaped gas makes its way to the ground. It is this mixing action of moving gases that makes it advisable to vent large storage tanks up into the air by means of stacks connected to the pressure relief valves.

Summarizing briefly, these are the characteristics of liquefied petroleum gas which produce fire hazards, and determine our procedure in preventing fires from occurring and fighting those which do occur: the gas is highly volatile, and is held under pressure; it will burn if it reaches a source of ignition while mixed with air in flammable proportions; its rapid evaporation produces a refrigerating effect; it is odorized as a warning that it may be present in dangerous quantities; it may travel a considerable distance from the point escape in hazardous concentration, either down-wind or down hill.

You will recall that in previous assignments we called attention to many rules, regulations, and precautions which, if followed, would minimize the chances of escape of fuel under normal conditions, and other regulations regarding the location of storage containers that would minimize the possibility of allowing fuel lost in filling tanks or changing cylinders from getting to sources of ignition while still in sufficient concentra-



tion to be flammable. Let us briefly review some of these provisions which directly affect fire hazards which may be of value in preventing or controlling fires:

No L. P. gas container of any type should ever be filled beyond the proper level. If exposed to excessive heat, an overfilled tank may discharge liquid fuel instead of vapor through the pressure relief valve.

No propane or butane-propane mixture should ever be stored in a butane tank (80 to 125 psi working pressure). The safety relief valve is set to protect the tank, and the normal pressure of the propane or mixed fuel may operate this valve at normal atmospheric temperature on a warm day. Working pressures of 200 psi or higher are necessary for propane storage.

All house piping should be pressure tested and found free from leaks before the gas is turned on at the cylinder or the tank.

Manual shut-off valves are required at the cylinder or tank, and ahead of every appliance. (The latter are frequently omitted.)

Pipe ends must be capped immediately upon removal of an appliance, and the gas valve at the storage container should never be opened unless and until it is certain that all unconnected pipe ends are capped and all appliance valves are closed.

Portable room heaters should not have built-in gas cocks—the gas should be controlled at the wall or floor by a suitable valve so designed and located that it will not be turned on accidentally.

Cylinders and other small containers may not be mounted within 5 feet of an opening into the house that is below the horizontal level of the cylinder valve.

Bulk storage tanks must be installed outside specified minimum distances from buildings already in existence, or from lines of adjoining property upon which buildings may be placed.

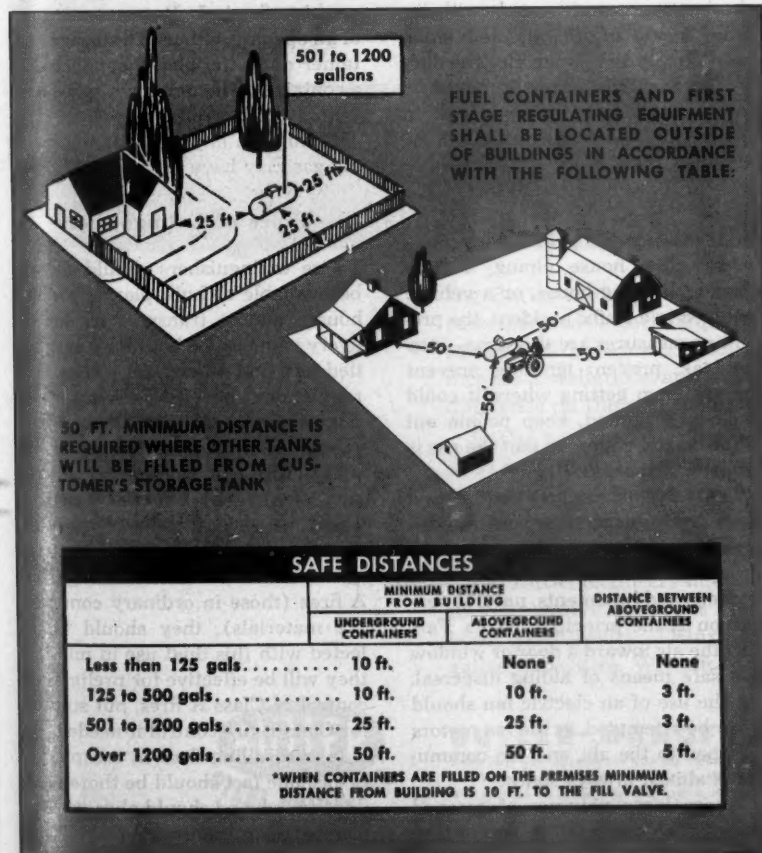
This last regulation serves a double purpose—it eliminates the chance that fuel lost when the filling hose is disconnected might get to a source of ignition in a building before it is diluted below the limit of flamma-

bility, but more important, it isolates the tank from sources of immediate heat in case a fire should start in an adjacent building, and provides space in which fire fighters may work to provide protection. For these same reasons we have regulations against the proximity of incinerators and open fires, and against allowing weeds to grow or combustible trash to accumulate around cylinder or tank installations.

Protective Values

Other important requirements to aid in preventing the escape of hazardous amounts of fuel from containers are the automatic protective valves which must be included in the equipment of stationary storage and mobile vehicle tanks. The nature and action of these valves will be covered in detail in a future assignment. (Those required on mobile vehicle tanks were described and illustrated in the Power Department of the November '53 BUTANE-PROPANE News. See page 146.) For the purposes of this lesson it is sufficient to know that on all tanks now approved for these services, every opening through which an amount of gas that would be difficult to control if ignited, except the pressure relief valve, must be fitted with an internal automatic closure that will function to prevent the escape of large quantities of fuel in case the manual external valve should be broken off, or if a service line or filled hose should accidentally become broken off or disconnected.

Domestic type tanks of less than 1200 Gallons capacity having vapor withdrawal service outlets of not over 5/16 in. internal diameter, which are fitted with manually controlled valves mounted directly at the tank, and followed immediately by a regulator, are allowed exception to the above requirement by Pamphlet 58. Liquid outlet lines of not more than 1/2 in. inside diameter, similarly protected by manual valves and regulators, are also allowed the same exception on domestic type tanks of less than 1200 gallons net water capacity. While some state codes may not agree with these exceptions, the matter is introduced here to indicate that in most localities we can not expect automatic closure of the service outlet in tanks of this class. The effect of the regulator is



to limit the flow of fuel, which may be stopped completely by closing the manual valve at the tank.

From the above discussion it will be seen that the recognized standards for the design and installation of L. P. gas equipment, and the established regulations for handling the product, have been planned and developed primarily with the idea of preventing fire if possible, and providing a means of controlling the escape of gas if the containers are exposed to fire. It emphasizes the fact that "fire prevention" is not some miraculous operation that we perform just as a fire becomes imminent—it is something that is an integral part of every operation performed in connection with the storage, transportation, handling, and use of L. P. gas, and the core of



Tank from wrecked truck — liquid outlet valve knocked off. Excess flow valve closed at once, preventing escape of fuel.

the problem is prevention of the escape of the gas.

Unfortunately, conditions sometimes arise which cause the escape of gas. Cases of mechanical failure of approved storage and control units which result in escape of gas are extremely rare. The most frequent causes are accidents of God or man, human carelessness, or just plain ignorance. When gas does escape, we are either going to prevent a fire, or fight one. There is no other alternative—and since prevention is the preferable course, let us consider the steps that may be taken to prevent fire when gas is escaping.

There are five fundamental safety procedures which should be followed—at once. They are:

Stop the escape.

Prevent accidental ignition.

Prevent entrance of gas into lower portions of buildings.

Clear people out of the danger zone.

See that the gas is dispersed.

The first two procedures will generally be taken care of first, but the order in which the third, fourth, and fifth steps are taken will vary with circumstances, such as the location of the point of escape, proximity of buildings, vehicular traffic in the vicinity, and many other conditions, including the seriousness of the leak.

Behavior of Escaped LPG

We know that escaped L. P. gas will behave in certain ways, and we base our preventive program on those facts. It is heavier than air, so we know it will be concentrated at ground level if escaping out of doors, and along the floor below an indoor leak. It will drift down-wind or downhill in the open, and will flow into basements and other low spots if opportunity offers. It will burn if it is exposed in flammable proportions to any source of ignition sufficiently hot to start combustion—and this may include open fires, matches, burning tobacco, pilot lights of appliances, sparks from electric switches or motors, automotive ignition systems, hot exhaust pipes, and any number of other sources of heat. It will disperse slowly in still air, and much more rapidly in moving air. The danger zone will be more localized in still air, and more concentrated. In moving air, the danger zone will be extended, with possibility of a flashback all the way to the source of the escape.

So whether the point of escape is in defective house piping, a bulk plant or bottling house, or a vehicle involved in a traffic accident, the preventive measures are the same—stop the leak, prevent ignition, prevent the gas from getting where it could explode if ignited, keep people out of the danger zone, see that the gas is properly dispersed.

The ways to accomplish the first steps are quite obvious, but the dispersal of gas is sometimes a problem. In small confined spaces, such as kitchens and basements, natural ventilation is the principle means. Fanning the air toward a door or window is a safe means of aiding dispersal, but the use of an electric fan should never be attempted, as the fan motors are open to the air, and the commutators almost always spark.

Where large volumes of escaped gas must be dispersed in an outdoor location, the high pressure stream

from a hose is one of the safest and most effective aids. If there is any movement of air, the gas should be approached from the windward side, and the stream played through the area where it is known or suspected that the gas is lying. If you have ever cleared the leaves off a lawn with a stream of water, you no doubt noticed that swinging the nozzle rapidly from side to side did almost no good, while moving the stream slowly along the surface developed enough force in the moving air to drive the leaves away ahead of the stream. The same principle will apply to dispersing gas with a hose—the object is not to get the gas wet, but to drive air through it and dilute it to non-flammable proportions in the shortest possible time. Where possible, it is always desirable to call on the fire department for assistance with the dispersal of any really large volumes of gas. In case the gas should ignite before it is completely dispersed, the presence of the fire department at the scene may prevent extensive property damage, and might even save lives.

The next possibility to be considered is a fire in L. P. gas pouring out of an opening, either in a storage container or in the piping connected to a container. The necessary steps are:

Stop the flow of gas.

Extinguish any fire that the burning gas may have ignited.

Types of Extinguishers

Fire extinguishers should always be available at bulk plants, bottling houses, and on transport trucks, delivery vehicles for both bulk and bottled gas, and on service trucks. The regulations generally require extinguishers suitable for Class B fires (those occurring in flammable liquids), where a smothering (exclusion of oxygen) effect is essential. There are several types of these extinguishers, and since their most frequent use will be in controlling Class A fires (those in ordinary combustible materials), they should be selected with this dual use in mind, so they will be effective for preliminary control of Class A fires, but suitable for Class B fire control if needed.

In controlling fires in escaping L. P. gas, one fact should be thoroughly understood, and should always be remembered in the emergency: Whenever escaping L. P. gases are burning,

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no attempt should be made to extinguish their flame unless it is positively known that by doing so, access may be gained to a known shut-off valve which will stop the flow of gas. So long as the gas is burning, it is destroying itself, and rendering itself harmless. This is insurance that the gas will not accumulate in quantities great enough to cause a larger fire or possibly an explosion if reignited moments later. Under all other circumstances, the only way to put out a fire in burning L. P. gas is to close a valve shutting off the flow to the point of escape. This should always be the first step in fighting a gas fire. Any good class B extinguisher will put out an L. P. gas fire of ordinary proportions, but the proper technique is to put out the gas fire by turning off the gas, and then using the extinguisher to put out any other fire that may have resulted from the ignition of the gas, or that may be burning in the vicinity of the L. P. gas container.

Overheating Hazards

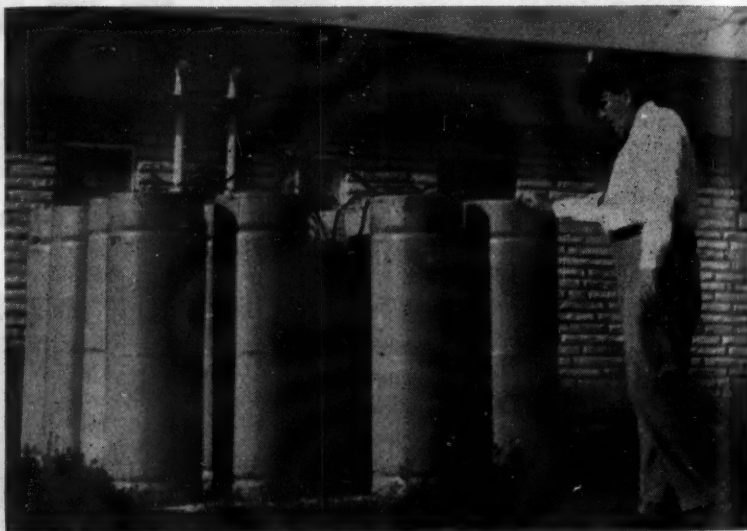
We now come to the third situation, in which L. P. gas is escaping, and may be burning, as the result of overheating of the tank or cylinder. Overheating the container causes the pressure relief valve to open and discharge part of the contents of the tank. If ignited, this gas burns like a torch. If the tank has been properly designed and installed, this torch burns harmlessly in the air. The exhausting of part of the tank contents causes rapid evaporation of liquid to replace the vapor that has escaped, and this evaporation refrigerates the tank, so in the course of a little time the valve closes. If the tank continues to receive heat from the outside, it again develops sufficient pressure to operate the pressure relief valve. If the excessive outside temperature is maintained, the pressure relief valve will operate intermittently until the entire liquid contents of the tank are exhausted, and there is nothing left inside but vapor. As long as there is no flame playing directly on the vapor space of the tank, the evaporation of the liquid fuel will hold the entire tank to a safe temperature. This is a direct parallel to your own experience with the teakettle in your kitchen at home. As long as there is water in the kettle, the boiling fluid will limit the temperature and pro-

tect the kettle. When the water has all boiled away, the teakettle can be very quickly ruined by the flame of the stove.

The playing of a direct flame of high intensity on the shell of an L. P. gas tank from which the liquid contents have been exhausted, or on the vapor portion of a tank which still contains some liquid, may heat the metal until it loses its strength and becomes thermoplastic. The internal pressure may then cause the tank to bulge, and in some cases it may even burst. It will not explode—it will merely rupture under pressure, just as steam boilers sometimes burst. This is not a nice thing to have hap-

pen, is the best possible treatment.

The water spray treatment is also the most effective means of controlling fires in groups of cylinders which may become overheated enough to cause the safety relief valves to discharge. Where these cylinders are close together, either in storage, in transit, or in connected batteries, and combustion starts, the heat from one may cause discharge from the adjacent cylinder, which makes a situation that requires a great deal of cooling to bring under control. Large batteries of cylinders should not be placed close to combustible structures. It goes without saying that any



16 cylinders manifolded together supply fuel for heating motel. Installation located in clear space away from buildings.

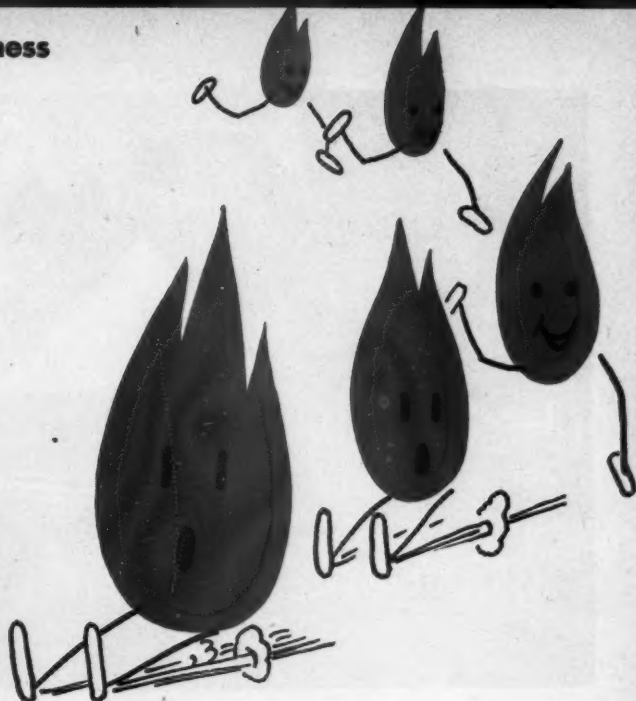
pen, as considerable damage may ensue and if the tank still contains liquid it is likely to spread the fire. But with this sequence of causes and results in mind, we can prescribe a treatment that is a sure cure if it can be applied. The basic cause is overheating—we can check the whole train of events if we can cool the tank sufficiently. Water, applied as a gentle spray or fog, will keep the tank temperature down within safe limits.

In sprinkling down an L. P. gas tank to prevent rupturing, be sure to spread the water over a wide area—never direct a heavy stream under high pressure upon one spot on the steel shell, as this could “temper” the steel in that area so severely that it becomes brittle and weak. A fine spray, continued until the cause of

cylinders still equipped with fusible plugs add a needless hazard in multiple installations. The fusible plugs should be replaced with solid plugs, and the cylinder valves should be equipped with the proper pressure relief valves. The relief valve may cause a momentary problem, but it is not to be compared with what would happen if a fusible plug should melt and discharge the entire contents of the tank.

Summarizing this assignment briefly, the three steps in connection with L. P. gas fires are all “prevention”: prevent gas from escaping; prevent escaped gas from igniting; prevent existing fires from causing the escape of any more L. P. gas. If you are successful in the first step, the other two will not cause much trouble.

Let's make **SAFETY** Everybody's Business



**STOP
FIRES**



1 PREVENT

the escape of Gas



2 PREVENT

the Gas from igniting



3 PREVENT

existing fires from causing
the escape of more Gas



SAFETY MEETING

Date _____

Time _____

Place _____



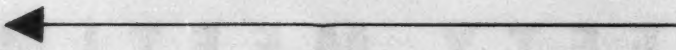
The poster on the other side of this page
is for your use in announcing the Safety
Meeting covering

**"The Prevention and Control
of L. P. Gas Fires"**

(See opposite page)

Fill in date and hour of your meeting, and
pin on bulletin board.

*** Another poster comes next month.**





New water heating method does outstanding job in The Valley Forge Restaurant

The Valley Forge Restaurant, at the famous national shrine, Valley Forge, Pennsylvania, daily requires many gallons of hot water at two different temperatures. Sanitizing 180° hot water is needed to supply the automatic dishwasher, and regular 140° hot water for the 8 hot water taps (kitchen sinks and wash rooms).

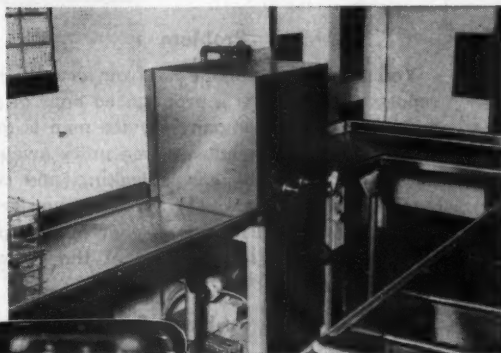
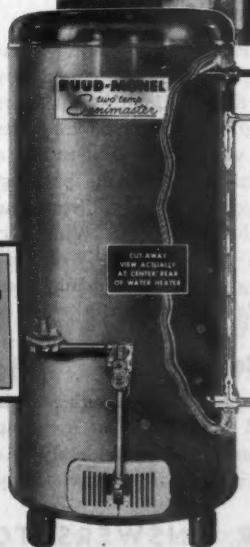
A Ruud-Monel two-temp° Sanimaster water heater solves *both* problems by providing 180° water and 140° water from the same tank at the same time! In fact, the Ruud-Monel Sanimaster is the *only* self-contained water heater that supplies both regular-hot and extra-hot water from one tank at one time.

MONEL—NATURE'S WONDER METAL

SANIMASTER's tank is made of solid MONEL—the only metal that safely holds water at such high temperatures as 180°. And it will never rust! Ruud-Monel two°temp Sanimaster, with its exclusive long-life Monel tank, will give you sparkling clean hot water for years and years.

RUST PROOF

RUUD-MONEL
two°temp
Sanimaster



180° SANITIZING HOT WATER is piped directly into the Toledo DS-22 Dishwasher. Provides positive bacteria destruction.

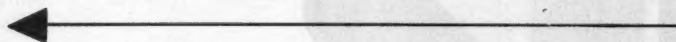
140° GENERAL USE HOT WATER is available continuously at the 8 hot water taps in the kitchen and rest rooms. All this from the same tank at the same time.

In addition to the Ruud-Monel two°temp Sanimaster, Ruud offers a complete line of water heaters for domestic, commercial and industrial applications.

For specifications, data and literature, write Dept. T4.

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The poster on the other side of this page
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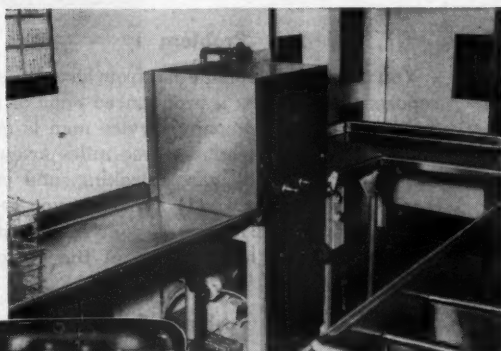
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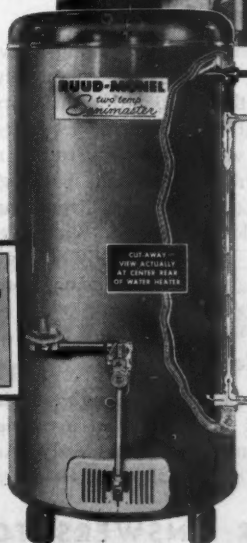


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Problems For Discussion At Twelfth Safety Meeting

Petroleum products are the world's finest fuels because they offer a highly concentrated form of heat, burn readily and efficiently, and are easy and economical to produce, store, transport, and utilize. This is true of the entire range of products, from heavy fuel oil down through gasoline and liquefied petroleum gas to natural gas.

Because of their superior nature as fuels, all of these products present fire hazards. They will burn if exposed to air and ignition. Burning under control, they are man's useful servants. Burning out of control, they menace both life and property.

Except in those rare cases classed as "acts of God", all petroleum fires that burn out of control happen because, somewhere along the line, some person failed to do the right thing.

In our branch of the industry, the days when an important percentage of fires were caused by inadequate equipment are happily in the past. Our approved equipment is good. Our use and installation of equipment is not so good, but it is improving — coming closer to the day when L. P. gas fires can only be caused by misuse of equipment.

Which is a long way of saying that nearly all L. P. gas fires can be prevented. Fortunately, today they are rare, and are becoming more rare with every passing year. But they still happen when someone does the wrong thing.

A serious fire at your company plant, or a bad fire somewhere else originating with your company's product, could be a personal disaster to you. It could result in personal suffering, loss of time, loss of pay, or limiting of opportunity.

Fires are prevented by understanding the nature of the product, the equipment with which it is controlled and utilized, the standard procedures for its safe handling, and what to do in emergencies.

It comes back to the same old sermon that we have preached so many times — UNDERSTAND, and THINK.

The problems presented below are there to help you test your understanding of how to prevent fires originating with L. P. gas.

Problem 1

You receive a telephone call from a customer who reports that there is a pronounced odor of gas in her kitchen. The company service man is making an installation at a house three miles away from the place where the gas is leaking, and can be reached by telephone. (1) What do you tell the customer to do? (2) What is your next step? (3) Outline all steps to be taken at the customer's premises.

Problem 2

The company's bulk truck is out making deliveries. The valves, meter, and hose are completely enclosed in a housing at the back, with tight doors and a steel floor through which six ½ in. holes have been drilled for ventilation. En route, a valve starts to leak slightly through the packing. What possible hazards could develop from the escape of gas into the closed housing? What corrective measures would you suggest? What improvements could you suggest in the housing, from the standpoint of safety?

Problem 3

A cylinder delivery truck is on its route, and is forced off the road and overturned in avoiding collision with a car being driven recklessly. As the cylinders roll out, one is thrown violently

against a rock, knocking off the cap and breaking the valve. The truck takes fire, and gas escaping from the damaged cylinder ignites. The flame impinges against several other cylinders lying in the drainage ditch. What will happen if this continues, and what should be done to prevent additional damage?

Problem 4

Fire breaks out in a garage in the yard next door to a bulk tank that you are filling for one of your suburban customers. When you are first aware of the fire, your hose is connected and fuel is being put into the customer tank. Describe, in their proper order, the steps that you should take.

Problem 5

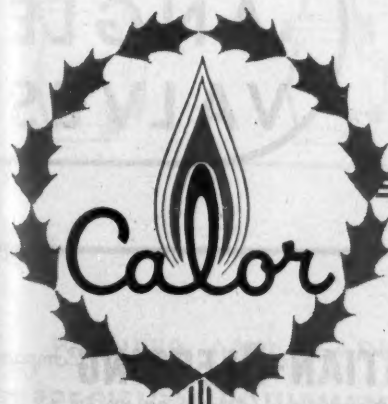
You may never be bothered with a tank that sits crosswise of an unsuspected earthquake fault, and have the foundations shift as the result of movement of the earth, but out in California it happened. A fitting in the outlet piping cracked, allowing the escape of fuel at a rate too slow to operate the excess flow valve, and some 4000 gallons of fuel escaped. Time, 5 a. m., location, 200 yards from the main highway through the San Joaquin Valley. As the result of prompt and correct action, fire and other undesirable consequences were avoided. How would you have handled this situation?

SEE PAGE 122 FOR ANSWERS TO LAST MONTH'S SAFETY PROBLEMS

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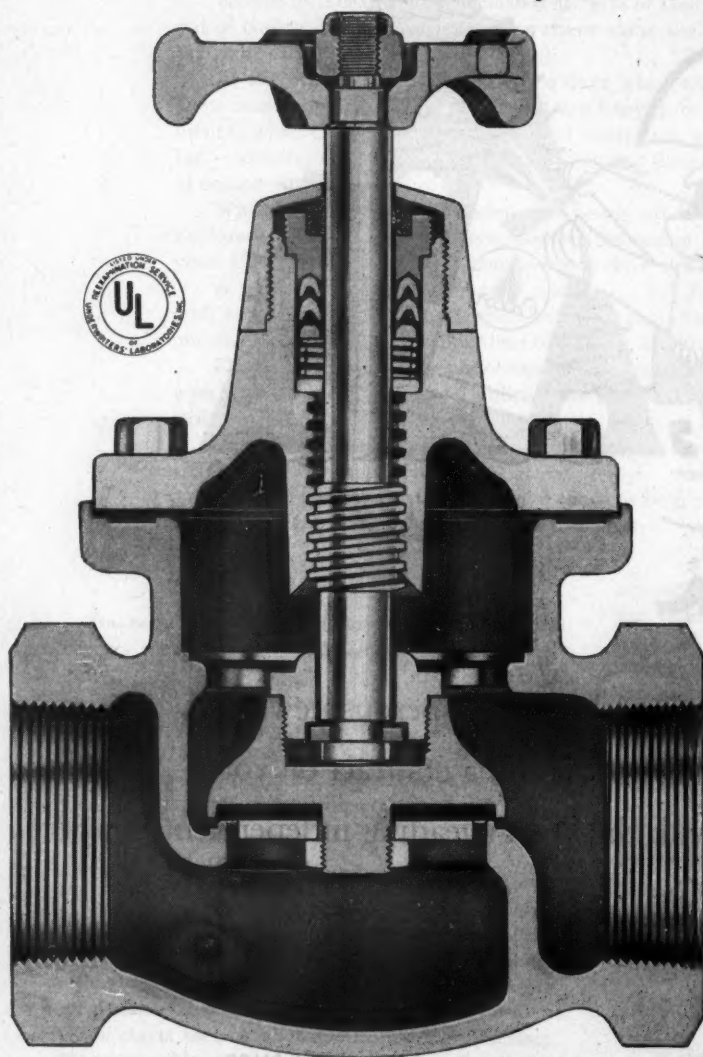
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No. 2513V — 2"	No. 2514V — 2"

**REGO
ANGLE
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LP GAS EQUIPMENT

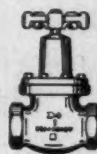
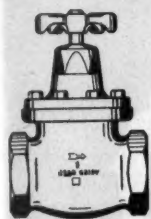
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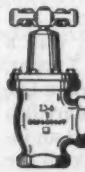
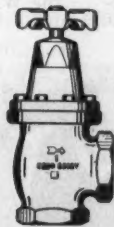
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For all of your installations, whether in bulk plants, cylinder filling plants, truck tanks, transports or industrial plants it will pay you to specify RegO Globe and Angle Valves.



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ASSOCIATION NEWS

Iowa



Eugene W. Schrage

Eugene W. Schrage was elected president of the Iowa LPGA at their annual convention held recently in Des Moines. Mr. Schrage, who has long been associated with the business of liquefied

petroleum, is vice president of Harms-All-Gas Co., Allison, Iowa.

Other officers elected were: G. Vogel, Sergeant Bluff, director-at-large; E. Holden, Davenport, vice president; G. Prince, Sanborn, treasurer; T. Turner, Mt. Pleasant, ex-officio member of the board.

Directors for the coming year are: W. A. Ueltshy, Fort Dodge; D. I. Green, Merville; D. L. Franck, Audubon; P. E. Pellett, Atlantic; C. R. Young, Knoxville; L. Winke, Fort Madison; E. Davidson, Osage.

Highlight of the meeting was a luncheon at which Tom Turner, president of the Iowa LPGA, introduced Don Ross, of the Meredith Publishing Co., who presented an interesting and informative talk on the relationship between the L. P. gas industry and the farm population of this country.

An afternoon meeting was devoted to a marketers' session, when Norman Evans, of the Pressed Steel Tank Co., with the aid of slides covered the subject, "Care and Control of L. P. Gas Cylinders." Harris Goodwin, The Bastian-Blessing Co., discussed "Care And Preservation of Utilization Equipment." As a service feature of the meeting, Frank Kohles, Metalbestos, William Wallace Co.,

conducted a school on "Proper Gas Equipment Venting Procedures."

A closing address, by Dwight Sutherin, Caloric Stove Co., explored the subject, "Can You Stand Alone."

Ohio

The Ohio L. P. Gas Association held its fall convention November 8-10 at the Hotel Sheraton-Gibson in Cincinnati. The meeting was the occasion of the first trade show of the association.

Nevada

An attendance of 200 was recorded at the recent annual fall meeting of the Nevada L. P. Gas Association.

Elected president was George Myers, Lovelock; vice president is Gabe Myers of Las Vegas, and secretary-treasurer is Charles Cavanaugh of Tonopah.

Speakers included Jack Joell, rep-

resentative for Selwyn-Landers, Woody Commins, Calor Gas Co. and Roy Mylander, Ensign Carburetor Co.

Wisconsin

The fall convention of the Wisconsin LPGA recorded approximately 100 in attendance at the Northernaire Resort in Three Lakes, scene of the event.

Focal point of the meeting was a panel discussion pertaining to industry problems. The official panel included Art Kreutzer, LPGA; Mel Ennis, LP-Gas Promotional Committee; Thurman McCormick, Dri-Gas Co.; Harlan Williams, Rapid Thermogas Co.; Ken Wolfe, Fisher Governor Co.; Paul Courtney, National Tax Equality Association, and Isi Statz, Director of Fire Prevention, State Industrial Commission.

William S. Brenckle is president of the Wisconsin group.



Fall meeting of the Wisconsin LPGA featured panel discussions on industrial problems. Pictured here are Tom Quail, Milwaukee, Harlan Williams, Des Moines, Iowa, William S. Brenckle, Waukesha, Wis., who is president of the association, Mac McCormick, Chicago, and Doc Runde, Sparta, Wis.

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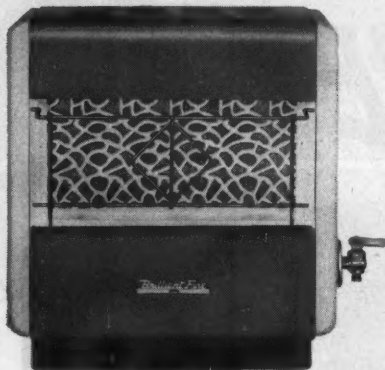
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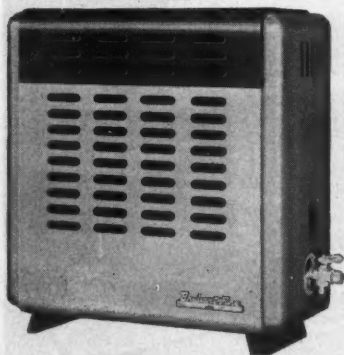
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Oklahoma

Nearly 200 were in attendance at the recent ninth annual meeting and convention of the Oklahoma L. P. Gas Association at the Hotel Tulsa in Tulsa.

Jeff Boucher, Standard Fuel and Appliances, Inc. of Tulsa was elected president, succeeding R. L. Epple of Tecumseh. Jewell Callahan, Callahan Butane Co., Broken Bow, was elected vice president and Glenn A. Springer, Oklahoma City, executive secretary and treasurer.

Claude Berry, mayor of Tahlequah and a member of the association, responded to Tulsa Mayor Warren's welcome at the general meeting. Other speakers included out-going president Epple and John Porter, of the Arkansas Butane Dealers Association.

The Oklahoma group has approved the establishment of the Journal at Tecumseh as the association's official publication, with John Hoffman as publisher and editor and Glenn Springer as associate editor.

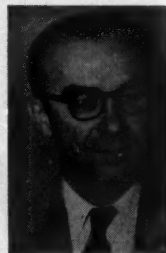
Kansas

The Kansas LPGA held its annual fall business meeting recently in Wichita, featuring reports of the president, William B. Hettic, old and new business, election of directors, presentation of safety awards and a discussion of the new special fuel tax law.

Speakers included Robert Strawn, Jr., Agricultural Equipment Co.;

Homer DeVault, First National Bank, Pratt, and Louis Marks, the Coleman Co.

Illinois



Bennie Schnepfer

With an attendance registered at 150 at their recent convention at the St. Nicholas hotel in Springfield, the Illinois LPGA elected Bennie Schnepfer, Blue Flame Gas Co., Olney, as their president. Harvey Gigstad, Bettergas Co., Prophetstown, was chosen vice president, and Judd Casey, Butane Gas and Appliance Co., Centralia, was named director.

Speakers at the event included Harold Jalass, vice president of Cribbon and Sexton Co., A. F. Smith, market research, A. O. Smith Corp., and Mel Trotter, president of the national association.

Virginia

George W. Noblett, Jr., Northern Neck Gas Co., Kilmarnock, was elected president of the association at the recent annual meeting in Old Point Comfort. Other officers include: Robert F. Pecht, Pecht Gas Co., Lawrenceville, vice president



New officers of the Virginia L. P. Gas Association are, left to right: Robert F. Pecht, vice president, George W. Noblett, Jr., president, retiring president Fred R. Hynson, and J. B. Christiansen, new secretary-treasurer.



NOW BEAIRD IS ON THE WEST COAST TOO

Our new factory at Stockton, California is now in production, manufacturing Beaird "Moisture Free" LP-Gas systems. Just as our Shreveport plant serves the states east of the Rockies, the Stockton plant serves the West Coast and Mountain States.

Here are the features of Beaird LP-Gas Systems:

ADVANCED DESIGN, including "Moisture-Free" dehydration by exclusive Beaird Thermo-Vacuum process.

NATIONAL ADVERTISING in Good Housekeeping Magazine, Country Gentleman and other leading farm publications.

HARD HITTING SALES AND MERCHANDISING PROGRAM, consumer sales aids, direct mail advertising, radio spots, sales literature, promotional materials.

GOOD HOUSEKEEPING SEAL, the seal which has guided careful buyers for half a century.

BEAIRD

Let us quote prices and delivery.

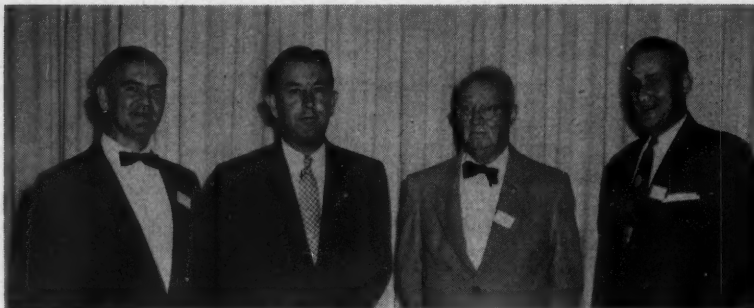
THE J. B. BEAIRD COMPANY, INC.

P. O. Box 248

Telephone 5-7268

STOCKTON, CALIFORNIA

LP-GAS SYSTEMS • ANHYDROUS AMMONIA EQUIPMENT



Men who will help to guide the Illinois LPGA through the next year are, left, Judd Casey, director, and, center, newly-elected vice president, Harvey Gigstad. at right is retiring president, John Norris.



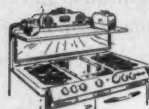
O'KEEFE & MERRITT—

the Gas Range with the Future Women Want!



There's a future built into this finer gas range—and your customer knows it! To her, the name O'Keefe & Merritt means less work and worry... the utmost in dependability through the years ahead. Let her preference improve *your* future. Write today for information on the new O'Keefe & Merritt models that will bring more sales, more profits to you.

Only O'Keefe & Merritt Has These Most-Wanted Features



Vanishing Shelf-Cover
—the patented work-space that becomes a spic-and-span cover when cooking's done!



Kool Kontrol Panel
—the scientifically slanted knobs can't overheat—and women like their extra convenience!



Grilleator Broiler
—with instant, fingertip choice of broiling levels and the faster Speedray Element!

O'KEEFE & MERRITT CO., 3700 EAST OLYMPIC BLVD., LOS ANGELES 23, CALIFORNIA

and J. B. Christiansen, Pyrofax Gas Co., Richmond, secretary-treasurer.

Numbered among the speakers were Julius Klein, Caloric Stove Co., who spoke on "Gas Versus Electric Appliance Merchandising," R. W. Rassbach, Scaife Co., whose subject was "Progress in Safety Devices," and Howard McPherson, American Gas Association, whose theme was "What AGA Approval Means."

Attendance was registered at 123.

Kentucky LPGA Exhibits At Home Economics Conclave

Following through in their effort to better public relations for the L. P. gas industry by close cooperation with the home economics forces of the state, the Kentucky LPGA exhibited ten appliances in a three-booth space at the annual convention of the Kentucky Home Economics Association, held at the Kentucky Hotel, Louisville, Nov. 5 and 6.

The booth was staffed throughout the open periods by volunteers from the membership of the KLPGA.

Indiana LPGA to Participate In Short Course at Purdue

The Indiana LPGA has been invited by the Indiana Warm Air Heating & Air Conditioning Association to participate in their annual short course at Purdue University. The school will consist of three problems.

(1) Concerning basic warm air heating procedures, including heat loss calculation, comparison of heating fuels, adaptability of different types of heating equipment and installation problems.

(2) Will be an advanced course covering similar subjects with the addition of summer air conditioning.

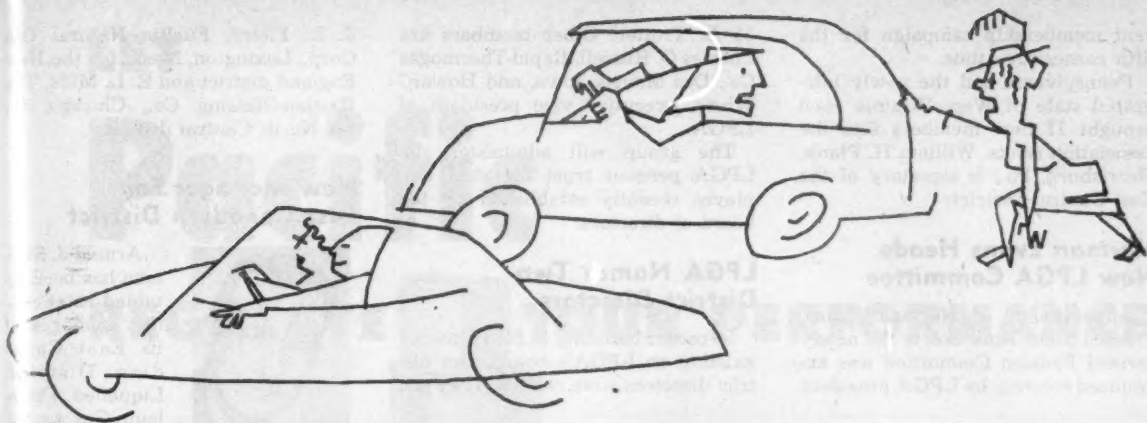
(3) Will cover all phases of heating and air conditioning of buildings of more than normal Btu heat loss and heat gain.

The Indiana Warm Air Heating group met with members of the LPG Industry to arrange a program that will be beneficial to the L. P. gas man.

Professor Merle McClure, director of adult education of Purdue University, Lafayette, Ind., is executive director of the short course.

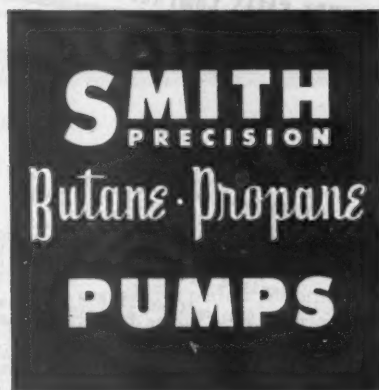
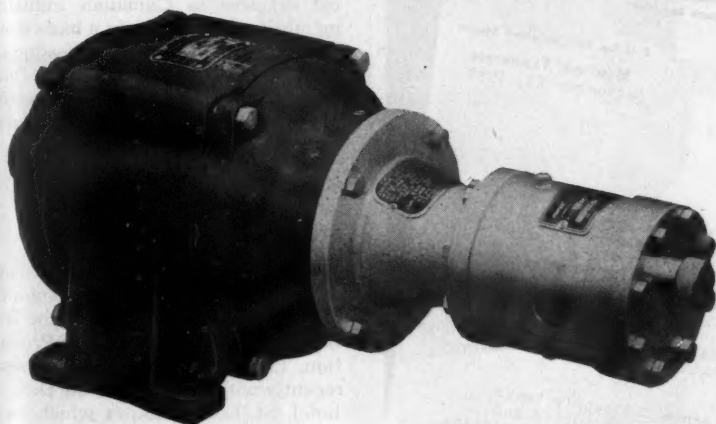
East Central District Leads Membership Drive

Signing up 51 of the 65 new members added to the LPGA roster since the last issue of the News Letter, East Central District leads the cur-



BETTER PERFORMANCE

IS WORTH ITS SLIGHT ADDITIONAL COST



MODEL MC-1

**For Filling Cylinders, Trailer Bottles,
Truck and Tractor Fuel Tanks;**

**At Miniature Bulk Plants, Farms, and
Ranches, or as Extra Equipment
for Large Bulk Plants, where
regular transfer equipment can-
not be tied up for small sales.**

The better performance of Model MC-1 is actually worth *much more* than its slight additional cost. It fills trailer bottles in one minute, 100 lb. cylinders in 3 to 4 minutes, and fuel tanks on motor vehicles at a rate of 8 to 10 gallons per minute *without a vapor return line*. (This is important to avoid inaccurate metering and customer complaints. It also saves hook-up time.) Smith Pumps are especially designed to help overcome vapor lock problems. They handle propane as easily as butane or mix.

Can be supplied with built-in starting switch. However, a separate outside switch is usually more convenient for the user.

Equipped with our patented leak-proof, self-adjusting packing, standard on all Smith Pumps since 1948.

Write for literature and prices on this or any of nine larger truck and bulk-plant models.

SMITH

PRECISION PRODUCTS COMPANY

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DECEMBER, 1953

79

rent membership campaign for the fifth consecutive time.

Pennsylvania and the newly integrated state of West Virginia each brought 17 new members into the association ranks. William H. Plank, Harrisburg, Pa., is secretary of the East Central District.

Norman Evans Heads New LPGA Committee

Appointment of Norman Evans, Pressed Steel Tank Co., to the newly formed Pension Committee was announced recently by LPGA president

M. L. Trotter. Other members are Charles O. Russell, Rapid-Thermogas Co., Des Moines, Iowa, and Howard White, executive vice president of LPGA.

The group will administer the LPGA pension trust for staff employees recently established by the board of directors.

LPGA Names Two District Directors

In recent balloting to fill vacancies existing on LPGA's board, two district directors were elected. They are

J. L. Fietze, Fuelite Natural Gas Corp., Lexington, Mass., for the New England district and E. L. Mills, The Bastian-Blessing Co., Chicago, for the North Central district.

New Manager For East Canadian District



Arnold J. Sleeman

Arnold J. Sleeman has been retained as secretary-manager of its East Canadian District, Liquefied Petroleum Gas Association, Chicago, announced today. His office is at 19 Richmond St., W., Toronto, Ont.

The Toronto office will provide local services to Canadian industry members and operate on a basis similar to other LPGA district headquarters, located in Wichita, Kan.; Denver, Colo.; Atlanta, Ga.; Boston, Mass.; Chicago, Ill., and Harrisburg, Pa.

LPG Promotion Group Starts Fifth Year

Ten new members, a dozen reappointees and 18 who have another year to serve now comprise the National Committee for LP-Gas Promotion. The group started its fifth year recently with a meeting at the DeSoto hotel, St. Louis, Mo., at which time members were named.

The group directs the National LP-Gas Promotional Program, industry-wide effort of the liquefied petroleum gas business. Co-sponsored by the Gas Appliance Manufacturers Association, Liquefied Petroleum Gas Association and Natural Gasoline Association of America, the project, which had its inception in 1949, includes broad-gauge advertising, publicity and employee training activities.

William A. Baden, Anchor Petroleum Co., Tulsa, Okla.; George P. Bunn, Phillips Petroleum Co., Bartlesville, Okla., and Howard E. Felt, Warren Petroleum Corp., Tulsa, were renamed to the committee by NGAA for two-year terms. Robert Brandt, Cities Service Oil Co., Chicago, Ill., is a new NGAA appointee, also for two years.

GAMA again selected Lee A. Brand, Empire Stove Co., Belleville, Ill., who is chairman of the committee; A. B. Cameron, Ruud Manufacturing Co., Pittsburgh, Pa.; Lyle Har-

26 MONTHS WITHOUT SERVICING!

AND STILL GOING STRONG

Telephone 2-905

CENTURY SALES COMPANY

CENTURY CONVERSION EQUIPMENT—PROPANE STORAGE EQUIPMENT

P. O. Box 5621 CROSBOW STATION
MEMPHIS, TENNESSEE
September 18, 1953

Corken's Inc.
208 East Grand
Oklahoma City, Oklahoma

Gentlemen:

In response to your inquiry concerning the service we have received on one of your pumps handling propane motor fuel.

In 1951 we installed a Corken Model 30 Pump at the Yellow Cab Company here in Memphis. These people had been making an average of 65 fills per day in taxi cabs and buses.

They are pumping a total of 1200 gallons per day and have been doing this for 26 months without the pump requiring service of any nature.

This is an unusual installation, since the supply tanks consist of two 1000 gallon underground tanks buried and covered with a concrete slab with the pump and meter sitting on top of the slab and taking liquid out of education tubes.

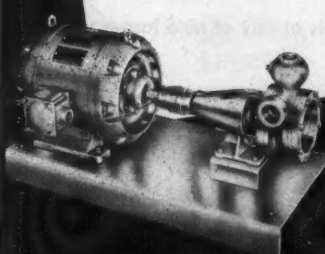
In spite of this, the pump will fill a 32 gallon tank in less than two minutes.

It is interesting to know that we are using an 1 1/2" Pittsburgh meter and inventory charges are very close each 30 day period, indication of no vapor being pumped through the meter.

The pump was installed with the small by-pass arrangement to the vapor fitting on each tank as you have specified, which may account for the fact that it never seems to be vapor locked and always starts pumping immediately upon being energized.

Very truly yours,
Century Sales Company

Dean Moss
Dean Moss



the Model "30" liquid pump

CORKEN'S inc.

208 E. Grand REgent 6-6517
Oklahoma City, Oklahoma

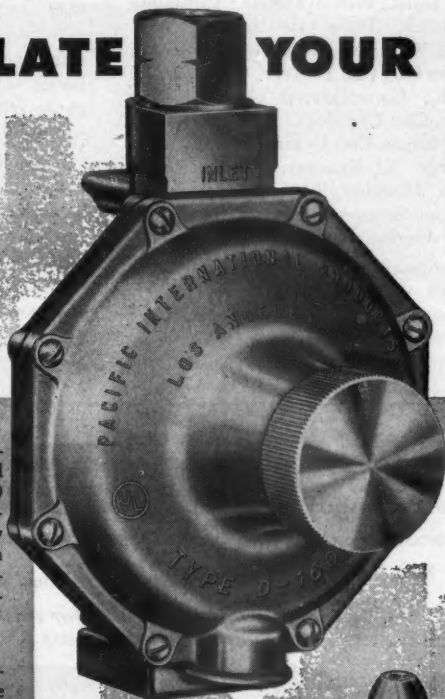
EASTERN OFFICE: 916 PUTNAM AVE., PLAINFIELD, N. J., PHONE 7-1305

LET

Pacific

REGULATE YOUR PERFORMANCE

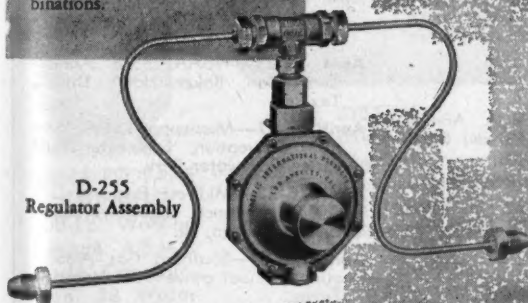
*Pacific Regulators are
engineered to meet
specific load requirements*



D-1600

MODEL D-1600 is Underwriters Laboratories approved to carry loads exceeding 750,000 B.T.U.'s of LP-Gas at inlet pressures of 100 P.S.I. It is ideally suited for systems ranging from I.C.C. bottles up to and including 1000 gallon bulk installations.

MODEL D-255 regulator assembly shown below is just one of several available. Models D-250 and D-260 provide various tee check and pigtail combinations.



D-255
Regulator Assembly



P-150

These two Pacific regulators will accommodate all LP-Gas load requirements. They are carefully engineered and precision made for perfect performance. To take advantage of its superior heat conducting properties, the body and cover of Pacific regulators are made of heavy cast aluminum. Black paint is used on the unit for its heat absorption qualities. The large passage area at the point of gas expansion plus the use of black painted aluminum reduces the possibility of freeze-up trouble to a minimum.

Write or wire for complete information

Pacific

INTERNATIONAL PRODUCTS, INC.

128 East Las Tunas Drive, San Gabriel, California
Telephone CUMberland 3-4759

Model P-100 is the same as P-150 without adapter. This regulator has a U.L. Capacity rating of 50 cu. ft./hr. and will deliver an appliance load exceeding 100,000 B.T.U.'s per hour.

P-155 regulator assembly with tee check and pigtails is available for use with regulator Model P-100.

A SIGN OF RELIABLE ACCURACY

Like the Sign of Sagittarius, the Universal sign is emblematic of quick, accurate target-hitting. Speed and reliability in serving customers in both producing and marketing of a complete range of petroleum products make your source in our universe UNIVERSAL.

REFINED PRODUCTS • NATURAL GASOLINE • BUTANE and PROPANE
SPECIAL NAPHTHAS • LUBE OILS and SOLVENTS

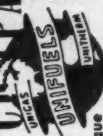
CARGO, TANK CAR OR TRANSPORT LOADS • WATER TERMINAL AT CHICAGO

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SAGITTARIUS

The Archer

Nov. 23 to Dec. 21—SAGITTARIUS
—Endowed with quick, accurate aim, uncanny intuition. Strong incentive, speed, reliability.

vey, Affiliated Gas Equipment, Inc., Cleveland, O., and David K. Patterson, Servel, Inc., Evansville, Ind., for two-year terms and named William H. Ferriss, Temco, Inc., Nashville, Tenn., to fill a one-year vacancy.

New committee members chosen by LPGA to serve two years are C. J. McAllister, The Parlett Gas Co., Waldorf, Md.; Spencer Nitchie, Butane Corp., Phoenix, Ariz.; Talmadge Lovelady, Pure Gas Service, Worland, Wyo.; F. N. Mabee, Mountain States Gas Co., Denver, Colo.; W. B. Wight, Consolidated Gas Co., Atlanta, Ga.; Charles O. Russell, Rapid-Thermogas Co., Des Moines, Ia., and George E. Kemper, A. O. Smith Corp., Houston, Tex. K. H. Dickson, Uregas Service, Moberly, Mo., will fill a one-year vacancy.

Reappointed to the committee by LPGA were A. H. Cote, suburban Propane Gas Corp., Whippany, N. J.; Walter A. Naumer, Pyrofax Gas Co., New York, N. Y.; E. L. Mills, The

Bastian-Blessing Co., Chicago; Peter A. Anderson, Cargo-Guard Co., Portland, Me., and Ralph E. Meeder, Selwyn-Landers Co., Los Angeles, Calif.

Earl Eacker New AGA Head

Earl H. Eacker, president of Boston Consolidated Gas Co., Boston, Mass., was elected president of the American Gas Association at its 35th annual convention recently held in St. Louis, which drew nearly 5000 delegates from gas utility and pipeline companies.

Other officers elected included: F. M. Banks, president, Southern California Gas Co., Los Angeles, first vice president; Dean H. Mitchell, president, Northern Indiana Public Service Co., Hammond, second vice president, and Vincent T. Miles, treasurer, Long Island Lighting Co., Mineola, N. Y., treasurer.



CALENDAR

All associations are invited to send in dates of their forthcoming meetings for this calendar.

1954

JANUARY

- Jan. 10-11—Arkansas Butane Dealers Association. Midyear meeting.
- Jan. 25-26—Michigan LPGA winter meeting, Pantlind Hotel, Grand Rapids.

FEBRUARY

- Feb. 15-16—Indiana LPGA. Annual convention and trade show. Claypool Hotel, Indianapolis.
- Feb. 21-22—Iowa LPG Service School, University of Iowa, Ames, Iowa.
- Feb. 26—NGAA Permian Basin Regional Meeting, Lincoln Hotel, Odessa, Tex.

MARCH

- Mar. 15-17—Midwest Gas Association. Annual meeting. Fort Des Moines Hotel, Des Moines, Iowa.
- Mar. 22-24—LPGA Southeastern District. Annual convention. Atlanta-Biltmore Hotel, Atlanta, Ga.
- Mar. 25-26—New England Gas Association meeting. Hotel Statler, Boston, Mass.

APRIL

- April 5-7—Nebraska Liquefied Petroleum Gas Dealers Association. Annual convention and trade show. Fontenelle Hotel, Omaha.

- April 9-10—Western Liquid Gas Association of California. Annual meeting, Palace hotel, San Francisco.

- April 14-16—National Petroleum Association. Semi-annual meeting. Cleveland Hotel, Cleveland, Ohio.

- April 21-23—NGAA 33rd Annual Convention, Baker Hotel, Dallas, Tex.

- April 25-27—Mississippi LPGA. Annual Convention. Edgewater Gulf Hotel, Edgewater Park.

- April 26-28—Midwest Regional Gas Sales Conference. Edgewater Beach Hotel, Chicago, Ill.

- April 26-28—Southern Gas Association. Annual convention. Houston, Texas.

MAY

- May 9-12—LPGA annual convention and trade show. Conrad Hilton hotel, Chicago.

- May 19-21—Gas Appliance Manufacturers Association. Annual meeting. Drake Hotel, Chicago.

JUNE

- June 6-8—Arkansas Butane Dealers Association. Annual convention.

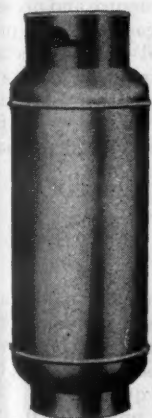
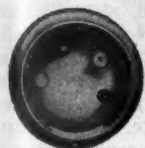
- June 28-29—Wyoming LPGA. Annual Convention. Townsend Hotel, Casper.

Master pieces in Steel Construction*

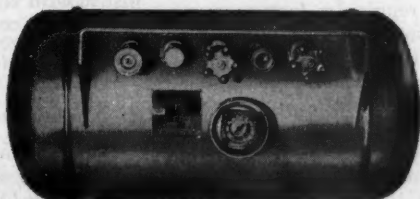


The Master Twin Barrel

For more load capacity and more profits on each trip, this Twin Barrel Giant has been fabricated of light weight, high tensile steel. This unit with a 6,000 gallon capacity is one of many standard items on our production line. We also handle custom production.



200-LB. PROPANE CYLINDERS
200-Lb. Working Pressure. A.S.M.E. Code Construction. 58 Water Gallon Capacity.



FUEL SYSTEMS

Stock items range from 15" diameter by 31" long with 20-gallon capacity through 24" by 60" long with 103-gallon capacity. Special sizes on request.



DOMESTIC SYSTEMS

Only one of our many tanks. A new 500-gallon Propane tank that meets all demand requirements. Compact fitting arrangement for liquid withdrawal in top and bottom. Many other sizes of Butane and Propane Tanks for above or underground. Meets all Code Requirements.

**Every Master tank is a Master Piece of Construction*



Phone, write or wire your requirements

Also Storage Tanks, Truck Tanks, Refinery Equipment, Anhydrous Ammonia Vessels, Large Diameter Line Pipe.

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DECEMBER, 1953

New Foot Ring Mastic Stops Rust on LP Gas Cylinders

Royston Laboratories, Inc. (first and only firm in their industry to join the L.P.G.A.) were swamped with requests for samples of their new corrosion-resistant Roskote Foot Ring Mastic at the L.P.G.A. Convention. There was good reason for this unusual interest. Roskote Foot Ring Mastic gives LP gas cylinders matchless protection against moisture, acids, alkalies, electrolysis and the resulting damage by corrosion. It withstands heavy abrasion, won't become brittle or sag through a temperature range of -40°F to 375°F.



The foot ring of the cylinder at the left has been coated with Roskote Foot Ring Mastic. The one on the right, coated with an ordinary paint has already started to blister and rust.

Easily Applied

This rust preventive mastic is applied by either brush or spray gun. It is applied cold and dries in approximately one hour. It's non-toxic, safe to use without harming skin.

Tough

Its horny film withstands the most severe vibration, distortion and bend tests. It does not oxidize, alligator, crack, check or scale.

Saves Rusted Tanks

On foot rings that have started to rust, the surface should be wire-brushed to remove loose scale, then coated with Royston Red Primer 4452A. The primer will arrest further rusting and form a tight bond to the metal. Roskote Foot Ring Mastic should then be applied to form a heavy, effective moisture barrier.

Wide Industry Acceptance

Over 100 major utilities, pipeline and oil companies have adopted Royston materials to prevent losses due to corrosion of buried and exposed steel structures. Royston's special formulations for varied industries have earned for them the reputation of a leading manufacturer of "tailor-made" coatings for corrosion control. Many 30,000 gallon LP gas underground storage tanks and thousands of gasoline storage tanks have been coated with Roskote Mastics.

Free Samples

For further information and free samples of Roskote Foot Ring Mastic and Royston Red Primer 4452A write to:

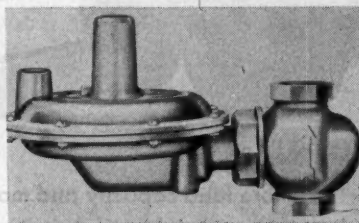
ROYSTON
LABORATORIES, INC.
BLAWNOX, PA.

Products and Trade Publications

To secure further information on products or new publications, fill out the coupon and mail, indicating by number the items desired.

1. Regulators

American Meter Co. has announced the production of its new Series 1400 Reliance regulators for house or service low pressure installations. These



regulators are particularly suited to applications where distribution systems are converted from low to high pressures.

The new regulators feature ease of installation and mounting in any position through incorporation of a union type removable pipe section. Regulators can thus be quickly installed in close quarters where space restrictions are encountered in existing meter piping, without difficulties and without the need for accurate alignment with the diaphragm section. The company states that the Series 1400 units are particularly designed to stand up under rugged op-

erating conditions with minimum maintenance, yet provide precise regulation over a wide range of flows and supply pressures. Maximum inlet pressure is 75 pounds per square inch.

For safety, the company advises, the regulators are strongly constructed to withstand normal installation stresses without damage. Also, a large area vent is provided for emergency gas escape in case of excess pressure. Large, soft, standard regulator springs provide accurate setting of outlet pressure and prevent adjustment for excessively high pressures. An optional built-in mechanical relief valve is set to relieve at approximately 14 inches of water. The Series 1400 Regulators are furnished with 3/4, 1 and 1 1/4-in. standard pipe thread connections.

American Meter Co.

2. Nameplates

Dietz Photo-Chemical nameplates are made by a process developed by The Henry G. Dietz Co. for use in manufacturing nameplates at low unit cost in small quantities.

This process is unique in that 10 reproductions can be made at a unit



READERS' SERVICE COUPON

Just fill in this coupon for Products information and copies of new publications, and mail to

BUTANE-PROPANE NEWS, 198 S. Alvarado St., Los Angeles 57, Calif.

12/53 Fill in numbers of items in which you are interested.

No. No. No. No.
No. No. No. No.

NAME AND TITLE.....

FIRM'S NAME.....

ADDRESS.....

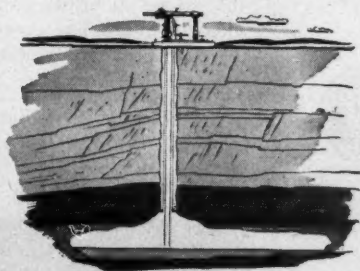
CITY..... ZONE..... STATE.....

it'll be there
when needed!



Shell has long maintained
the policy to sell propane only
within the company's capacity
to produce and deliver.

This assures contracted customers
a continuous supply of Shell Propane.



here's another reason...

Shell has huge subterranean "Jugs"—caverns
in salt domes, hundreds of feet below the
surface of the earth. They are filled with millions
of gallons of propane ready to go.

*These Jugs are typical of the additional protection
Shell provides its contracted propane purchasers.*



SHELL OIL COMPANY

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PORTLAND, OREGON • SACRAMENTO • ST. LOUIS • SAN FRANCISCO • SEATTLE





cost almost as cheaply as for a quantity of 500.

Nameplates can be supplied on any non-porous surface, such as metal, aluminum, glass, etc. They are also obtainable on .003 inch thickness of aluminum foil backed with a high tensile bonding material. They may

be produced in a variety of colors.

Dietz Photo-Chemical nameplates can be obtained by either the customer supplying the art work copy, or by sending in rough sketches, in which case the art work will be done by the Dietz Co.

The Dietz Photo-Chemical Process is also available for use in the customer's plant. On the customer's premises, nameplates can be made by unskilled help in broad daylight in a few minutes when supplied with the Dietz process equipment and photo-chemical materials.

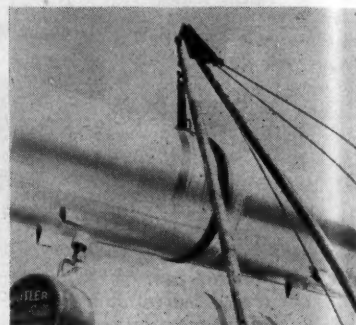
The process is able to reproduce 120 line half-tone prints, and when reproduced on a non-combustible material, they are not affected by heat or cold. Flame will not destroy the image.

Because of the ability and low cost of Dietz Photo-Chemical Process to reproduce very fine details not possible with other methods, it is ideal for other uses, such as lofting.

Henry G. Dietz Co.

3. Woven Wire Sling

Bulky LPG tanks have become easier to handle for the Butler Manufacturing Co. through the use of a



woven wire sling as shown in the accompanying picture.

The woven wire is broad and flat, provides a wider bearing surface and requires a single sling instead of the two-wire bridle rope wire sling formerly used. The complete hook-up requires only a matter of seconds, with the sling fitted around the tank in a choke hitch and the free end of the sling handle attached to the A-frame hoist mounted on the truck.

The sling can be rolled into a coil and stored in either cab or trailer when not in use. The woven wire construction prevents tangling or kinking even after long use.

The Cambridge Wire Cloth Co.

4. 2-Way Radios

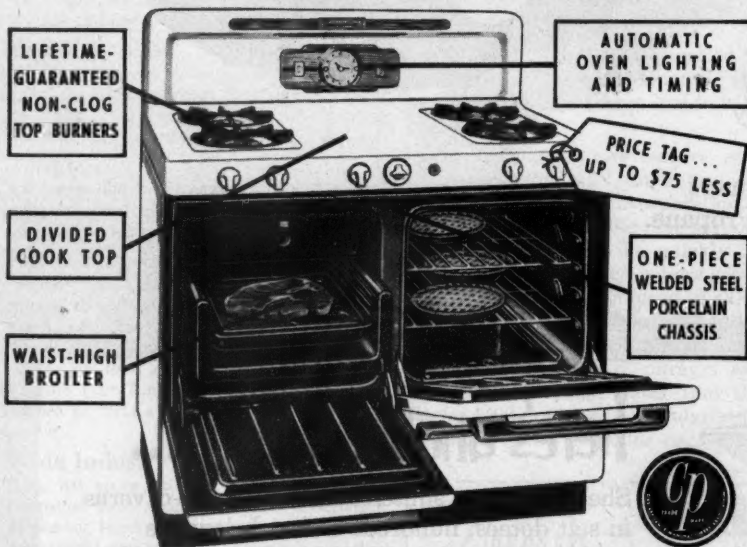


To prevent the obsolescence of 6-volt mobile two-way radio units by the trend toward 12-volt automotive

Features that HELP you sell

Enterprise

GAS RANGES



We don't believe any range in the world sells itself. But we *know* these features *help* you sell Enterprise. And Enterprise helps you to bigger profits by creating above average volume at below average prices (up to \$75 lower than ranges with the same features) with a normal mark-up.

It's well worth the few minutes it takes to get the full story. Write, wire, or call today:

Serving a value-conscious America for nearly 100 years.

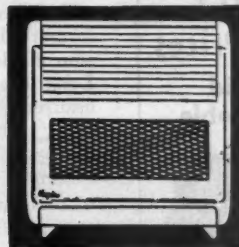
PHILLIPS & BUTTORFF MANUFACTURING COMPANY
NASHVILLE, TENNESSEE

Step ahead with **EMPIRE**

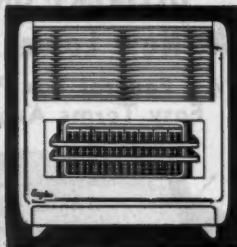


BIG

is the word for
DEALER
Opportunities



NON-RADIANT TYPE



STANDARD TYPE

COOL CABINET Gas HEATERS
CONSOLE TYPE Gas HEATERS
STANDARD TYPE Gas HEATERS

1. Superior EMPIRE quality assures user satisfaction, protects your good name and good will.
 2. EMPIRE quality eliminates complaints and service problems.
 3. EMPIRE quality is a master selling point . . . because your prospects SEE and FEEL it.
 4. EMPIRE quality puts you on top of the "light-weight" type of competition.
 5. EMPIRE quality gives you advantages in both price and profits.
 6. (And incidentally) EMPIRE doesn't know how to make anything but top quality equipment.
- Add these up for a very unique PLUS in the heating business.

If YOU are sincerely interested in a profitable heating business EMPIRE offers EVERYTHING you could ask for.

"EVERYTHING" includes the broad and complete line of sizes and styles, and the service that keeps an active dealer making money, and the promotions and advertising support to put continuous POWER behind your business.

Never has the heating business been more flourishing, and never has there been a more promising opportunity for the EMPIRE dealer.



COOL CABINET TYPE

**SILENT AS A KITTEN WITH
AN EXTRA SET OF PADS**

"Thriftmatic"
Gas
BURNER



SEE YOUR REPRESENTATIVE OR WRITE DIRECT TO EMPIRE

SELL THE MOST!
SELL THE LEADER!

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BELLEVILLE, ILLINOIS

WORLD'S LARGEST MANUFACTURER OF Gas FLOOR FURNACES

Empire a great name in Gas Appliances

WORLD'S FINEST PROPANE DELIVERY UNITS

At New Lower Prices

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Easy Terms Available



MODEL 100



MODEL 200



MODEL 300

PACKAGED TRUCK TANK UNITS

Prices include tank, piped complete, Viking KK-190 mechanical seal pump, 50' 3/4" filler hose, clearance lights, tank painted, ready to use.

MODEL 100

1400 W.G.	1600 W.G.	1800 W.G.
\$1755.00	\$1845.00	\$1960.00
Add \$150.00 for Model 200		
Add \$250.00 for Model 300		

We can furnish any make or model NEW TRUCK, including Ford, Chevrolet, G.M.C., Dodge or International (factory LPG equipped), and save you up to \$600.00 on a new truck.

Any make or model pump or meter can be supplied.

New 1953 2-ton Chevrolet, 2-speed, 825x20, 10 ply rear tires
— \$2150.00 —

Hose Reels — Fire Extinguishers
LPG Carburetion

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PROPANE TRUCKS FOR SALE
IMMEDIATE DELIVERY



Call
phones 570 or 686
Preston W. Grace

**WHITE RIVER
DISTRIBUTORS, INC.**
Batesville, Arkansas

electrical systems, Motorola Inc. has designed two small, highly efficient 12-volt to 6-volt converter units. One converter is capable of supplying from 10 to 50 amperes, the other from 10 to 30 amperes.

Both units, utilizing a special transformer-vibrator circuit, have conversion efficiencies of better than 80%. Long life and high reliability are assured through the use of a heavy duty, 16-contact vibrator. The small, compact units may be conveniently mounted either in the automobile trunk or under the instrument panel. Overall dimensions are 7 by 9 1/4 by 6 3/4 inches.

The use of these converters is especially advantageous to operators of fleets which have automobiles with both 6 and 12-volt electrical systems. With the converters, all mobile units of 6-volt design can be used and thereby permit standardization and easy interchangeability.

Although specifically designed for use with Motorola 10 and 30-watt mobile two-way radio units, the converters may be used with any mobile unit which operates within the given amperage limits.

There is no indication that there will be a wide swing from 6 volt to 12 volt in the lower priced automobiles. To the extent to which it is necessary to change to 12 volt operation, these new converters represent the practical and economical solution.

Motorola, Inc.

5. Direct Fired Vaporizer

A new direct fired vaporizer has been placed on the market by the T. Melsheimer Co. This heavy duty equipment is available in all sizes from 100 to 10,000 gallons per hour.

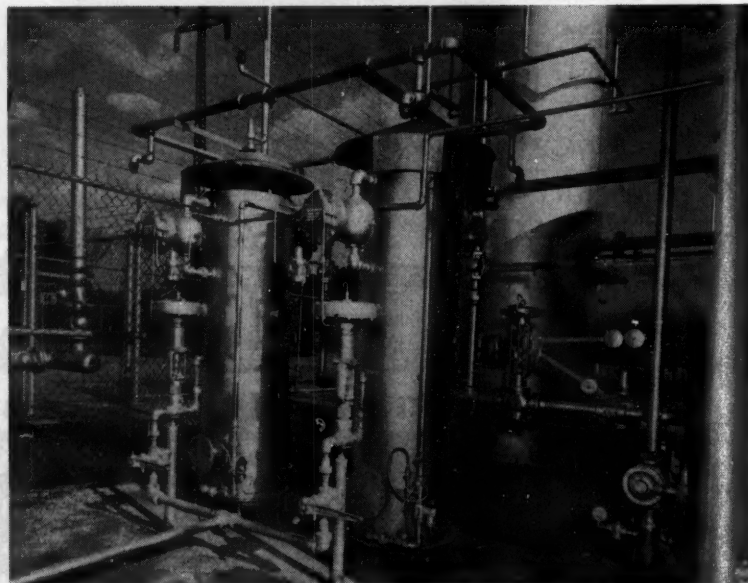
This vaporizer has been carefully engineered with generous heating surfaces for economy of operation, and with time-tested controls for the ultimate in safety and dependability. Fully automatic operation is obtained by an industrial type temperature controller which regulates the burner, supplying only the heat required to meet the actual load on the vaporizer at any given flow rate. Entry of liquid into the vapor discharge line is prevented by the liquid level controller.

The firebox is designed so that it is not a source of ignition in the event of a leak in the system near the vaporizer.

The vaporizing vessel is x-rayed and stress relieved in fabrication and all parts of the equipment are built in accordance with all applicable codes.

This vaporizer is suitable for installation in either straight vapor systems or in LPG-air mix plants of the industrial stand-by type. It is completely weather-proof and wind-proof, being intended for outdoor installation with no shelter required. It may be noted in the picture that fire protection sprinklers are mounted over the vaporizers.

T. Melsheimer Co.



New Melsheimer vaporizers are direct-fired and are weather and wind-proof, being intended for outdoor installation with no shelter required.

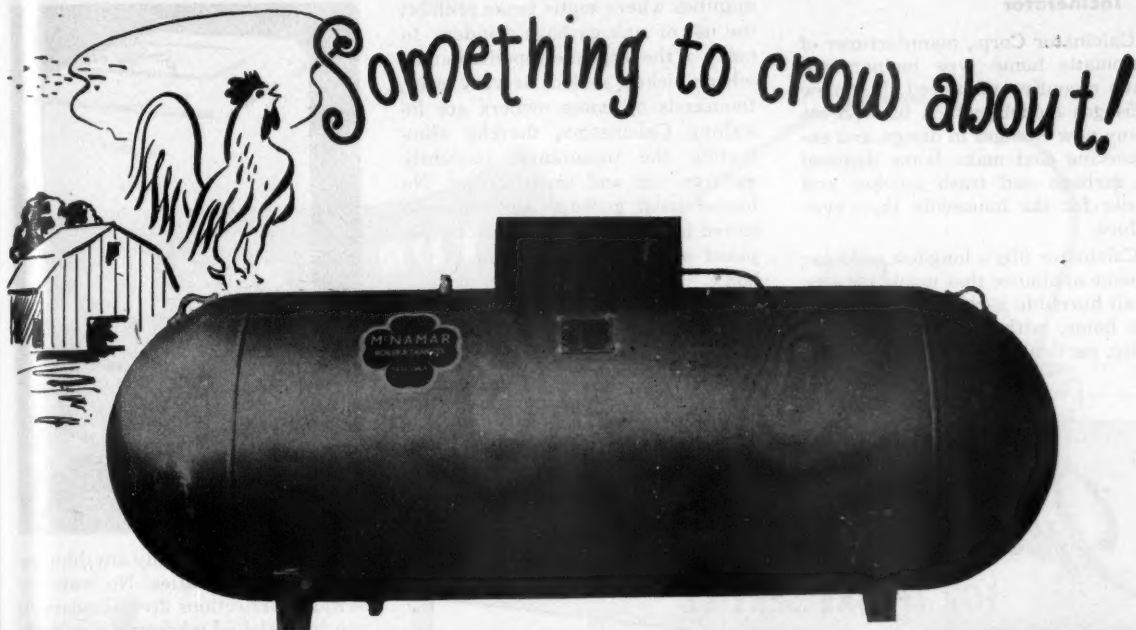
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the LPG tank that means customer satisfaction
—and bigger profits for dealers.

McNamar's LPG TANK

Here is the result of years of experience and the demand for a better and more rugged LPG tank . . . one that provides a bigger profit because of the turnover. McNamar really has something to crow about in this superior tank . . . and you will too when you offer it to your customers. This new, improved model is designed for convenient filling and unloading. . . . Liquid openings are easily accessible from top and bottom. . . . It is available in all standard sizes. Give your customers the best LPG tank . . . that's McNamar!



Check with us about our New McNamar Finance Plan

McNAMAR
BOILER & TANK CO.
BOX 868 • TULSA, OKLAHOMA

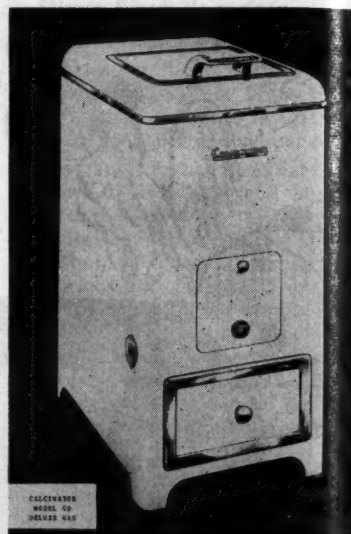
6. Incinerator

Calcinator Corp., manufacturer of automatic home type incinerators, have recently announced their new 1954 gas models, which incorporate many new changes in design and engineering that make home disposal of garbage and trash quicker and easier for the housewife than ever before.

Calcinator fills a long-felt need for a home appliance that would dispose of all burnable garbage and trash in the home, without odor, smoke or noise, particularly in suburban com-

munities where septic tanks prohibit the use of sink garbage grinders. In many of the large metropolitan areas where pickup service is very poor, thousands of home owners are installing Calcinators, thereby eliminating the unsanitary, unsightly garbage can and trash burner. No longer need garbage and trash be stored for pickup—now it can be disposed of immediately—right in the home.

The gas Calcinator consumes all food wastes, bones, egg shells, rags, old shoes, paper, cardboard, vacuum



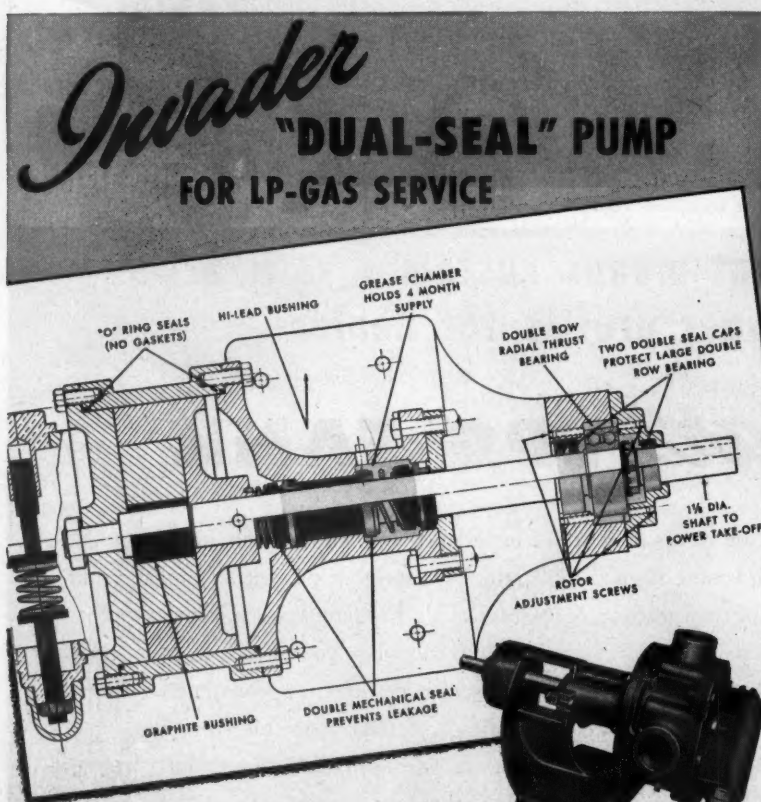
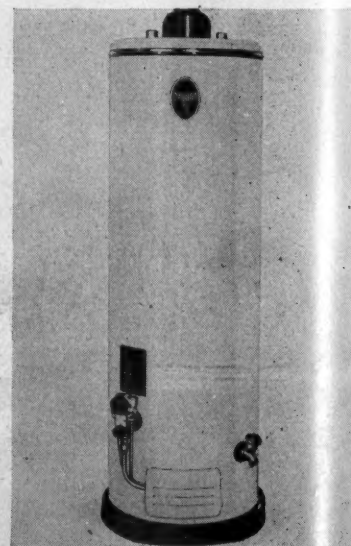
cleaner dirt—practically anything except cans and bottles. No water or sewage connections are necessary. It can be installed wherever a suitable flue is accessible. The new 1954 gas Calcinator is UL and AGA approved, carries the Good Housekeeping Seal and is accompanied by a 5 year warranty. It operates at a cost of only a few cents a week. Normal gas input is continuous at 1700 Btu. A selector control increases input to 3000 Btu when fast burning is desired.

The Calcinator is available in two models, standard—metallic brown; and de-luxe—white. Both are baked enamel silicone finishes.

Calcinator Corp.

7. Water Heater

A newly-developed glass lining, possessing rust and corrosion resist-



DOUBLE MECHANICAL SEAL PROTECTION FOR BEARINGS

Look closely at the diagram above. See the many advanced engineering features in this new Invader pump! Thanks to the double mechanical seal, these pumps can't leak. The bearings are protected against water and dirt, assuring long, trouble-free operation.

Mounted on your trucks or installed in your bulk plant, Invader LP-Gas pumps will give you the kind of service you have always wanted!

HERE'S ANOTHER REASON why Invader pumps perform better... longer. Improved, rounded tooth design assures less "down" time, fewer replacements.

Write for Specifications, Dimensions and Prices

Invader
PUMPS

The SCHIRMER-DORNBIRER PUMP Co.

1719 East 39th Street • Cleveland 14, Ohio

A 2 FOR 1 BUY
... for metered service
**the SPRAGUE COMBINATION
 METER and REGULATOR**



- ✓ **Save on initial cost — single compact combination units cost less than meters and regulators purchased separately.**
- ✓ **Save on storage space, weight and installation costs.**
- ✓ **Ideal for multiple sets with LP-Gas single tank installations.**
- ✓ **Like all Sprague products... proven through years of service in the field.**

**THE SPRAGUE METER
 COMPANY**
 BRIDGEPORT, CONNECTICUT

BRANCH OFFICES
 DAVENPORT, IOWA
 HOUSTON, TEXAS
 LOS ANGELES, CAL.
 SAN FRANCISCO, CAL.

ant qualities "greatly superior to any other known commercial substance," heads a list of outstanding features of the new Bryant "Crystalglas" automatic gas-fired home hot water heater.

Protection afforded by the Crystalglas heater lining is equally effective in all areas of the nation, regardless of the chemical content of available water supplies, it is claimed.

Exclusive Bryant design, plus an extra-heavy steel tank, equip the Crystalglas heater to test at 400 pounds per square inch hydrostatic pressure. Standard working pressure

for the Crystalglas heater is 170 psig. Minimum heat loss is assured by a heavy fibreglas insulation.

The new Crystalglas heater is available in four sizes to meet all home requirements: 20, 30, 40, and 50-gallon capacities.

Quality construction features of the Crystalglas heater include a heavy-duty steel tank, assembled in two pieces prior to applying the glass coating. The bottom and center flue are assembled as one part, and the shell and head as the other.

Crystalglas heater action is controlled by Grayson Unitrol A thermo-

stats, suitable for use with all types of gases, including LPG and LP-Air.

Other Crystalglas heater quality features include Bryant's draft diverter, dip tube for introducing cold water at the bottom of the tank, center flue equipped with Bryant "Link-Trap" baffle for maximum heat absorption, selective temperature control, automatic pilot action, adjustable burners, drain faucet for effective tank flushing, a porcelain enamel reflector plate, and a sturdy one-piece heater base.

*Bryant Heater Div.
Affiliated Gas Equipment, Inc.*

ORDERED TODAY...



Prompt, reliable delivery usually means the difference between 'profit and loss' for buyers and dealers of LP products. That's why SUNRAY makes a special effort to ship any order — whether emergency or routine — in the shortest possible time.

This reliable service policy, coupled with SUNRAY's controlled, highest quality products, is the reason SUNRAY is continuously adding new customers to its "contract account" list. Protect your 'profit' by ordering from SUNRAY.



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WHEN YOU NEED IT

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GENERAL OFFICES

TULSA, OKLAHOMA

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8. Incinerator

Locke Stove Co. has introduced a gas-fired incinerator with firebrick lining to be sold under its well known "Warm Morning" trademark.

The "Warm Morning" gas-fired in-



cinerator is AGA-approved for use with natural, manufactured, and liquid petroleum gases. It will burn all garbage and trash, except cans and bottles, to a fine powdery ash.

A special type of slotted-port burner, consuming 10,000 Btu's of gas per hour, produces a fan-shaped flame that instantly ignites dry trash and quickly dehydrates and burns wet garbage. When the main burner is not operating, any unburned garbage remaining in the incinerator is slowly dehydrated by the 1000 Btu pilot light which is fully protected by a Baso 100% Safety Valve.

Capacity of the incinerator is 1.7 bushels. The full firebrick lining is impervious to the corrosive effects of

Want valves that are fast- and safe?

You are looking at one of the toughest jobs ever assigned to a valve.

That's why they put Rockwood Ball Valves on duty in the Globe Oil bulk plant at Lamont, Ill. The flow has to be full and round — valves must open and close in trigger time — to keep tank trucks going and coming in minimum time. And since this is around-the-clock performance, it takes the toughness of a Rockwood Valve to stand the pace.

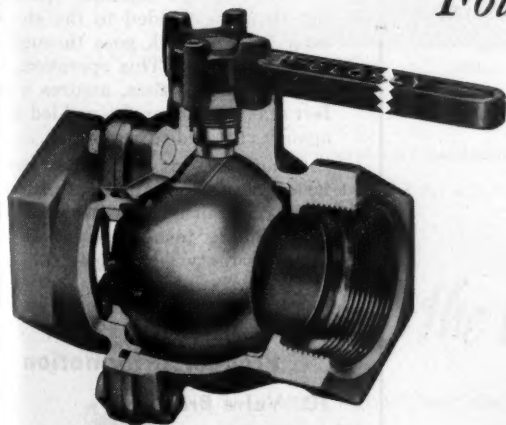
But — it has to be absolutely leakproof, too. Oil sludge over the loading area pavement would mean a great fire hazard. When a Rockwood Ball Valve closes, it's shut positively.

This company wouldn't consider any valve but Rockwood for the job. Neither would you, after you get the details.



24 Hours a Day trucks come and go at the Globe Oil bulk plant at Lamont, Ill. Quick transfer of petroleum products with safety calls for special features. Rockwood Ball Valves have them.

Four features you need...



ROCKWOOD

THE FLOW IS AS ROUND AS THE PIPE ITSELF

FULL-FLOW BALL VALVES

1. **Full round flow** — no turbulence in fluid stream.
2. **Leakproof** — after continued use.
3. **Quick opening and closing** — with quarter-turns under full pressure.
4. **Longer life** — longer periods between replacement and no maintenance.

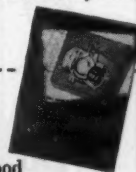
Tested and listed by Underwriters' Laboratories, Inc.
Comes in all pipe sizes.

ROCKWOOD SPRINKLER COMPANY

22 Harlow Street
Worcester 5, Mass.

Send me illustrated folder V-4 on Rockwood Full-Flow Ball Valves.

Name
Title
Company
Street
City Zone State



food wastes and also insulates the sides of the incinerator to prevent excessive heat radiation. The unit measures 35½ inches high and 18 inches square. Connects to 6-inch flue and ½-inch gas line.

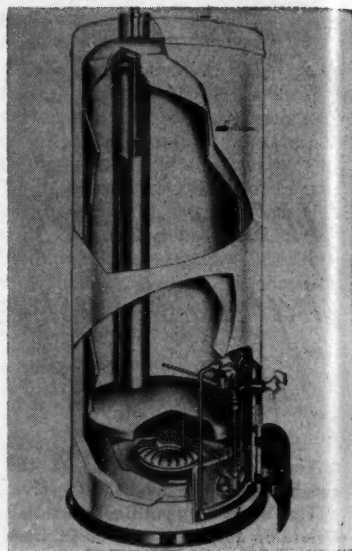
The dome and feed door are made of heavy cast-iron, finished in heat-resistant porcelain enamel. The feed door is hinged at the side so that it may be opened without the hand or arm passing over flame from burning trash. A built-in flue passage of heavy expanded metal mesh prevents garbage or trash from blocking flue outlet.

Non-combustible objects, such as cans or bottles, which are unintentionally put into the incinerator may be dumped directly into the ash pan by means of the draw center, cast-iron grate. The ash pan requires emptying only once or twice a month in average use.

Locke Stove Co.

9. Water Heater

The new Coleman Vitrock water heaters, first introduced in the spring of this year, are accompanied by an



unqualified guarantee that is offered against rust and corrosion combined with unusual construction features.

The sides and top of the tank are coated with 3/16 inches of smooth, waterproof rock applied by the new exclusive patented Burwell method. The rock, in a semi-liquid state, about like cement, is fed into the tank. The tank is then spun at terrific speed of over 3000 R.P.M. The tremendous centrifugal force generated plasters the rock layer evenly over the entire surface, driving it into every seam or pit to seal the metal with a 100% waterproof rock barrier.

The bottom of the tank and immersed flue are covered with vitreous enamel in a separate operation before being welded to the storage tank and the tank goes through its rock-lining spin. This operation, the manufacturer claims, assures a perfect seal, even over the welded area, against rust and corrosion.

Other features of the new water heaters include the famous Coleman Blu-Arch burner, an offset baffled flue, double insulation, and a ten year warranty guarantee.

Coleman Co.

Product Information

10. Valve Brochure

A colorful informative brochure, illustrating and describing the complete selection of Fairbanks new L. P. gas valves has just been printed, it was announced by The Fairbanks Co.

Construction details, basic specifications, and valve applications are furnished for the bronze globe, angle,

Carter

***LP-Gas**

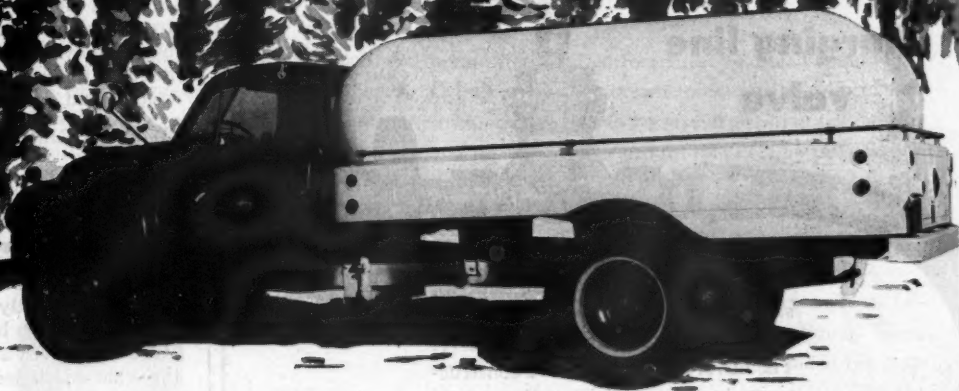
Carter produces high quality Propane and Butane for both industrial and domestic uses. Our service and products are unexcelled. You can depend on Carter.

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are now possible with LMC and its tanks!



The LMC incorporates all the desirable features of home delivery units in one model:

ECONOMY • HIGH PAYLOAD • SAFETY • SMART APPEARANCE



Buy on the LMC budget plan!

WRITE FOR ADDITIONAL INFORMATION, PRICES AND PAYLOADS

LUBBOCK MACHINE & SUPPLY CO



DRAWER 1589

PHONE 3-4631

LUBBOCK, TEXAS

check, spring-loaded check and gate valves which have the Underwriters' Approval for L. P. gas service and carry the required 400# W. O. G. pressure rating and LPG-FU body markings. The valves are recommended for all common commercial forms of liquefied petroleum (butane-propane) gases whether handled in liquid or gaseous state and are designed for application on all types of piping systems for storing, transporting, and utilizing these gases. Features of Fairbanks valves

which insure tight seal and positive closure are emphasized.

Fairbanks Co.

11. Filling Station Folder

A two-color, four-page folder on its new packaged L. P. gas filling station has been published by The J. B. Beaird Co., Inc., of Shreveport, La.

The 8½-inch by 11-inch folder describes in detail the features of the newest in the Beaird standard line of products for the L. P. gas industry.

The new product is designed for use in servicing trucks, buses, passenger cars and other motorized equipment using L. P. gas as fuel and for filling cylinders and bottles.

Designed and built with all components required for storing and dispensing L. P. gas, the unit includes dispenser, storage tank, pump, hose and all fittings, valves and safety controls. The entire packaged station is mounted on a rugged steel skid base. An expanded metal guard protects piping and valves under the tank and allows for circulation of air.

The smartly styled filling station is designed with sleek, modern lines and smooth, machine welded seams. It is finished in sparkling white enamel on a well prepared surface which has been sandblasted and primed.

Entitled "Beaird Packaged LP-Gas Filling Station," the folder is available on request.

J. B. Beaird Co.

12. Price List

American Tank and Manufacturing Co. has issued a new price list covering their L. P. motor fuel tanks, tractor tailored L. P. tanks and twin barrel delivery trucks. The literature includes photographs and sketches of models and specifications.

American Tank and Mfg. Co.

New Publications

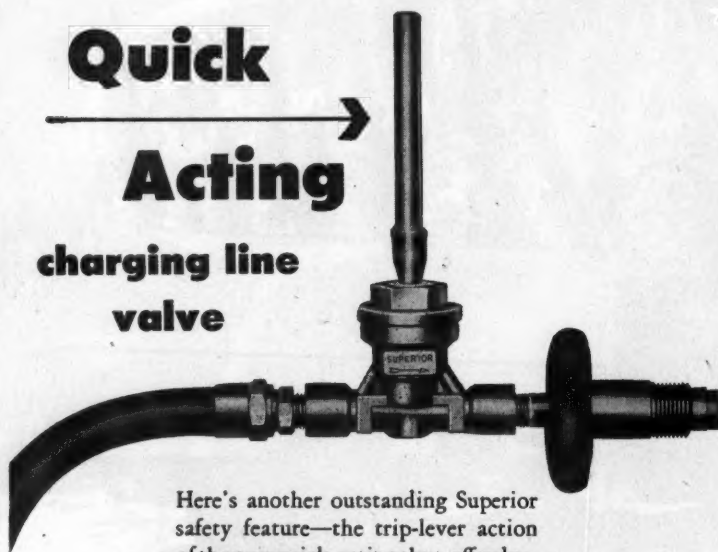
Book on Atomisation

"The Atomisation of Liquid Fuels," published recently by John Wiley & Sons and written by E. Giffen and A. Muraszew, gives a concise survey of the characteristics, properties, and most useful results of the atomization of liquid fuels. The authors discuss the mechanism of disintegration of liquid jets, fuel spray characteristics, effect of atomizer on spray characteristics, simple theory of the swirl atomizer, and the use of dimensional analysis for correlation of atomization data.

Other topics covered are the effect of physical properties of the liquid on spray characteristics, effect of the properties of the gaseous medium on spray characteristics, effect of injection pressure on spray characteristics, formation and development of intermittent and continuous sprays, and experimental methods for assessment of fuel spray characteristics.

Dr. Giffen is professor of civil and mechanical engineering at Queen Mary College, University of London. Dr. Muraszew, also of London, has

**Quick
→
Acting**
**charging line
valve**



Here's another outstanding Superior safety feature—the trip-lever action of the new quick-acting shut-off valve. The novel diaphragm valve construction assures you of immediate opening and shut-off—completely safe from leaks. Quick-coupler with neoprene nose seat for quick assembly and disassembly. Two-ply, heavy-duty neoprene charging hose and re-usable stems and ferrules on hose ends are other quality features on this Superior equipment.

You can rely on Superior's Symbol of Safety



Superior valve & fittings company

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PREST-O-LITE

TRADE-MARK

LP-Gas CYLINDERS

are built to
make money
for you . . .



Available in popular 20-lb., 40-lb., 60-lb. and 100-lb. sizes, with or without valves. Other styles can be made to order.

PREST-O-LITE Cylinders combine unsurpassed quality, low cost, and attractive appearance to satisfy the exact needs of LP-Gas users everywhere. Cylinders are rugged and sturdy for long, dependable service life. They're lightweight for easier handling. Factory testing is in excess of requirements to assure maxi-

mum safety and performance. And all PREST-O-LITE Cylinders are deep-drawn to extremely uniform wall thickness so you can be sure of exacting size, weight and capacity. Superior anti-rust coating protects the cylinder bottom and interior of footring from corrosion—a valuable safeguard at no extra cost! Durable aluminum enamel protects the cylinder finish indefinitely and reduces your repainting costs.

Your wisest, most economical investment in LP-Gas cylinders is in the PREST-O-LITE Brand. Write or 'phone your nearest LINDE Office today for complete information.

Data is deeply cut in large characters into an extra thick, wide flange on 60-lb. and 100-lb. cylinders (into valve protecting head ring of 20-lb. and 40-lb. sizes). Lettering remains easy to read throughout life of the cylinder.



LINDE AIR PRODUCTS COMPANY

A Division of Union Carbide and Carbon Corporation

30 East 42nd Street **UIC** New York 17, N. Y.

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"Prest-O-Lite" and "Linde" are registered trade-marks of Union Carbide and Carbon Corporation.



conducted individual research in the field as well as collaborating with Dr. Giffen in experiments and earlier papers.

"The Atomisation of Liquid Fuels" contains 246 pages and is priced at \$6.00.

Home Heating Book

Norge Heat Division, Borg-Warner Corp., has recently published a 50-page book entitled "The Golden Book of Heating Knowledge" which pro-

vides enough basic heating know-how for a consumer to intelligently appraise the different types of heating systems.

The purpose of this informative guide is to provide usable basic information about "warm air" and "wet heat systems" that will enable a home owner or prospective home owner to get a better understanding of the advantages and disadvantages of the wide range of heating equipment offered in today's market. Information is also given covering heating

controls, fuel cost reduction, and a glossary of heating terms.

The book is obtainable by mailing 25 cents in coin, along with your request, to Norge Heat Division, Borg-Warner Corp., 346 E. South St., Kalamazoo, Mich.

Pyrometer Calibration Data

The Bristol Co. has announced the publication of their new issue of "Pyrometer Thermocouple Calibration Data." These new tables are based on data recently released by The National Bureau of Standards. Adopted by the Scientific Apparatus Makers Association and the Instrument Society of America, the new tables are corrected to the absolute volt and to the International Temperature Scale of 1948. The Iron-Constantan table has also been corrected to a new curve which has been adopted by SAMA.

Copies of the new tables, bulletin P1259, are available from The Bristol Co., Waterbury, Conn.

Worthington Publishes New Technical Magazine

Worthington Corp. has announced the first issue of the Corporation's technical publication, "Power and Fluids." The new magazine will present articles and other editorial material of such calibre as to establish it as a reference for its field.

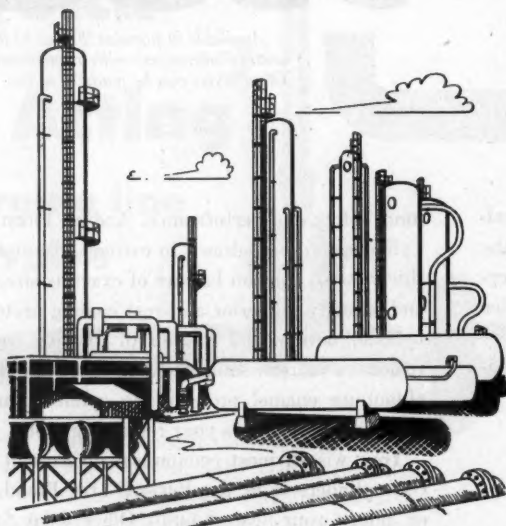
"Power and Fluids" will be presented quarterly and the editorial content will consist of useful and authoritative information for readers in the power and fluid handling fields. It will describe new product applications, processes and methods. Subjects covered will include installations, operation and maintenance of industrial apparatus and applications of particular interest because of specific problems involved. All material will be slanted to serve as a technical aid to the reader in his work.

The new publication is expected to teach an initial external circulation of 25,000. It will be distributed to Worthington customers and prospective customers, libraries and industrial relations departments of recognized technical institutions including engineering colleges, technical societies, and industrial concerns requesting it.

"Power and Fluids" will be published at Worthington's Harrison, New Jersey offices under the editorial supervision of Cy. Freeman. Mr. Freeman is a graduate engineer (M.E. Cooper Union) with considerable experience in technical journalism.

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LIQUEFIED PETROLEUM GAS



... in L. P. gas also Cities Service means Good Service

- A DEPENDABLE SOURCE
- UNIFORM PRODUCTS
- A CAPABLE SUPPLIER
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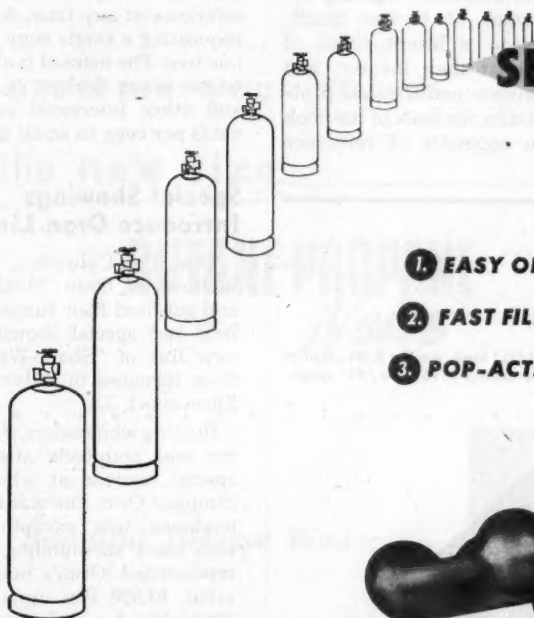
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WHEN YOU'RE FILLING CYLINDERS HOUR AFTER HOUR

...That's the Time to Judge a Cylinder Valve!



SELWYN-LANDERS

1. EASY OPENING AND CLOSING
2. FAST FILLING
3. POP-ACTION RELIEF



A cylinder valve serves a dual purpose—

(1) TO PROVIDE FREE AND EASY FUEL PASSAGE IN AND OUT OF THE CYLINDER AND POSITIVE SHUT-OFF.

(2) TO PROVIDE A SAFETY RELIEF AGAINST EXCESSIVE CYLINDER PRESSURES. Anything less than that or anything that slows down the filling operation, or hinders quick opening and closing, costs you money in lost time.

It doesn't take long to lose a dollar of an employee's time when he's got to break into the continuity of a well-planned, fast-filling operation to mess around with balky, hard-to-open and hard-to-seat cylinder valves.

Yes, the time to judge a cylinder valve is when you're filling cylinders hour after hour. And the time to assure fast, easy and safe valve action is when you order your next cylinders. SPECIFY SELWYN-LANDERS. They cost no more.



Drawings on file with
Bureau of Explosives.

S-L

SELWYN-LANDERS COMPANY

4709 East Washington Blvd.,
Los Angeles 22, California

Service Manual

The first complete service manual ever produced on the subject of maintenance and servicing of center simmer burners has been released by the Harper-Wyman Co.

The new 48-page manual is designed to give the gas range dealers and his servicemen information that will enable them to give superior maintenance and installation service. In this way customer confidence will be gained and will eventually show up in increased sales. The manual has

been prepared in full color so that reference to the appearance of the flames during burner operation and adjustment will be absolutely authentic.

Subjects covered in the booklet are: types of burners in use, types of valves and their adjustment and maintenance, automatic lighting adjustment, types of burner heads, changeovers to different types of gases and what they involve, and how to overcome performance problems. In addition, the back of the book contains an appendix of reference

charts for the serviceman that will give him immediate information on orifice capacities at various pressures for various types of gases and burners, orifice areas and diameters, plus volume and pressure equivalents.

The book has been produced in pocket-size so that a dealer or serviceman can carry it conveniently for reference at any time. A serviceman requesting a single copy will be sent one free. The manual is also available to gas range dealers, manufacturers and other interested parties at 25 cents per copy in small quantities.

Special Showings Introduce Oran Line

Oran Co., Columbus, Ohio, manufacturer of Oran "Shallo-Well" oil and gas-fired floor furnaces, recently held two special showings of their new line of "Shallo-Well" gas-fired floor furnaces in Atlanta, Ga., and Shreveport, La.

Heating wholesalers, dealers, builders and architects attended these special sessions at which time the complete Oran line was unveiled. Attendance was exceptionally high, with many surrounding states being represented. Oran's new 90,000 Btu input, 67,500 Btu output unit with circulating fan and completely automatic operation was the center of attention. This is one of the highest rated floor furnaces available today, and offers new and unique features never before incorporated in a gas-fired floor furnace. Other Oran units shown included the 80,000 Btu, 60,000 Btu and 40,000 Btu input models.

This unusual method of "taking the new line to the prospects" was an original idea of J. E. Ledger, Oran's sales manager. Mr. Ledger stated that acceptance was so overwhelming, that the company is planning additional special shows in other areas, in the near future.

Servel Meeting To Unveil 1954 Line

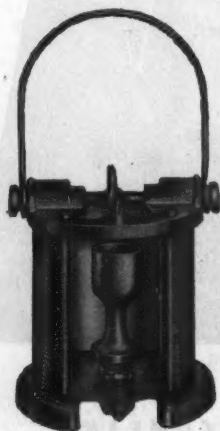
Servel's 1954 line of appliances will be revealed to the company's distributors at the annual national sales conference in Chicago on Dec. 14, 15 and 16, it was announced today by James F. Donnelly, vice president in charge of sales.

Headquarters for the sales conference will be at the Conrad Hilton Hotel. Presentation of the new products will be made from the stage of the Eighth Street Theater, which adjoins the hotel.

Sell Ransome LP-Gas Torches and Furnaces

FOR WINTER WORK

Here's real cold weather seller—several dealers have sold 100 to 200 in single season. Large, intense flame holds steady in icy winds and drafts, makes this RANSOME RHT torch ideal for thawing pipes, pumps and equipment. Trigger valve available for intermittent work. Burns 1 gal. LP-Gas in 90 mins. at 10 lbs. Lights instantly even at 30° below.



BUILDS SUMMER FUEL LOAD, TOO

RANSOME RHT torch has plenty of summer uses—melting lead, babbitt and white metal; pipe bending, preheating, fender repairs, singeing, weed-burning, flame cultivating, disinfecting, paint burning, etc. Sells to oil fields, farmers, garages, machine shops, factories, sheet metal shops, contractors, public utilities, etc.

Stock NOW. Write TODAY for price list, discounts and catalog.

P-25 Furnace makes good space heater (removable hood available). No fumes, smoke or soot. Designed for melting lead, glue, paraffine, asphalt, etc.

RANSOME COMPANY

Liquid Petroleum Gas Division

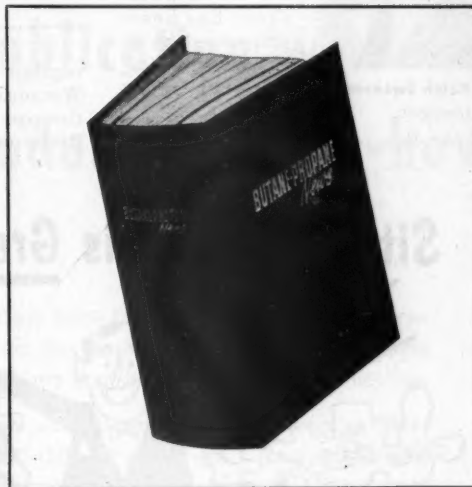
ROOM A12 • 4030 HOLLIS STREET • EMERYVILLE, CALIF.

Ransome

Handy Binder

to preserve your copies
of the new size

BUTANE-PROPANE
News



A Beautiful DeLuxe Binder

These binders are made especially to preserve copies of your favorite magazine. Holds 12 copies—one full year. Magazines can be inserted or taken out in a second's time, or bound permanently for future reference. Covered with long-lasting maroon Du Pont Fabrikoid with the name Butane-Propane News stamped in gold on cover and backbone. You'll be proud of these beautiful binders. \$2.50 each, postpaid.



BOUND IN A FLASH

Slip open magazine under elastic band it's bound firmly into place. Can be removed just as quickly.



OPENS FLAT

The curved backbone and patented binding system allow each magazine and page to open flat.



BINDS SECURELY

Patented Elasto Cord supports weight of each magazine separately, no mechanical devices to get out of order.



PERMANENT BINDING

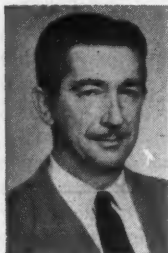
Plexon plastic covered wire and instructions supplied with each binder. Replaces elastic cord for permanent binding.

Send check for \$2.50 for each binder or \$3.00 from countries outside U. S.

- Add 3% Sales Tax for California orders, and 3½% Sales Tax for Los Angeles City orders.

Butane-Propane News
198 S. Alvarado St., Los Angeles 57, Calif.

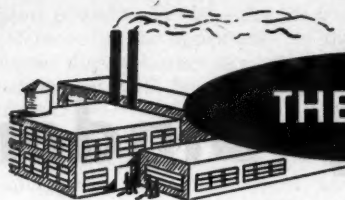
A. O. Smith Corp.



Ralph Swenson
manager.

Mr. Swenson, who has been sales

Appointment of Ralph E. Swenson as manager of the West Coast district of the Permaglas-Heating Division of A. O. Smith Corp., has been announced by S. E. Wolkenheim, general sales



THE TRADE



representative for the division in Wisconsin and upper Michigan for the past four years, succeeds H. L. Bilsborough, who is retiring.

The West Coast district No. 79 includes California, Oregon, Washington, Utah, Nevada, Idaho, Arizona, Montana and a part of Wyoming.

A new assignment as representative of the A. O. Smith Corp. in Venezuela, Colombia, Ecuador and Peru has been given to Frederick Koppl, member of the sales organization of the firm's International Division.

Mr. Koppl's knowledge of the company's products and commercial practices, together with his experience in selling industrial products in foreign markets, gives him a solid background for expanding A. O. Smith business in the growing four-country trade area in South America.

Sitting on Top is Great Stuff!



But, Sometimes It's Better To Go Underground!



G. H. "Smoky" Billue

Utilizing Mother Nature's natural structure for storage of LPG is right down my alley ... 'cause ole "Smoky" Billue is the guy who developed the underground method for SAFE storage, and it's a lot cheaper too. You'll appreciate the advantages that we can give you and put money in your pocket to boot.

Write for list of
successful installations



**SECURITY UNDERGROUND
STORAGE COMPANY**

Phone 2-4067

615 SUNSET DRIVE WICHITA FALLS, TEXAS

Affiliated Gas Equipment, Inc.

Two major executive appointments at Affiliated Gas Equipment, Inc., were announced today by Lyle C. Harvey, president.



James A. Hughes



Howard L. Clary

James A. Hughes, a vice president of AGE and general manager of AGE's Bryant Heater Division since 1951, has been appointed assistant general manager of AGE in addition to his regular duties as Bryant general manager.

Howard L. Clary has been appointed assistant general manager of Bryant Heater Division of AGE. Mr. Clary was formerly vice president of Norge Division of Borg-Warner Corp.

Mr. Hughes joined the Bryant Heater Division in 1949 as assistant general manager.

Mr. Clary is well known nationally in the wholesale appliance business. He joined Norge in 1945 and was elected a vice president in 1950.



You'll sell more in a publication with industry know-how

Liquefied petroleum gas is second only to television in its spectacular growth—and for 22 years BUTANE-PROPANE News has been making important technical and practical contributions to that growth.

The major textbooks for the industry have been prepared and published by B-P News; and nearly 20,000 letters from readers have been answered by our editors with operating and management advice.

LPG operators look to B-P News for guidance—and get it; and as a result, virtually every important buyer in the industry is a B-P News reader.

Advertisers know this. Every year for 14 consecutive years they have used more advertising pages in B-P News than in any other LPG publication.

Exclusive advertisers include such names as Chevrolet—Phillips Petroleum Company—Ruud Mfg. Company—Servel, Inc.—Sunray Oil Corporation—U. S. Rubber Company—Worthington Corporation—and 56 others.

Your best route to sales in this market is through the publication with LPG know-how—BUTANE-PROPANE News.

Paid Circulation Over 11,000

Average Distribution Over 12,500

**Write for complete market
and circulation facts**

BUTANE-PROPANE News

BPN

A Jenkins Publication • 198 S. Alvarado St., Los Angeles 57, California

BUTANE-PROPANE NEWS PUBLISHES THE ONLY COMPLETE LIBRARY OF INFORMATION FOR THE LPG INDUSTRY



1932

HANDBOOK BUTANE-PROPANE GASES. Arranged and edited by the editors of B-P News, published in 1932. Now in 3rd edition, 7th printing. It is still the top technical authority, quoted and recommended by U. S. Bureau of Mines. Price \$7.50—27,000 copies in use.

1939

BPN CATALOG. Published annually by B-P News since 1939. Brings into one binding the catalogs of 150 manufacturers and has been the main buying reference of the industry since the first edition.

1944

THE BOTTLED GAS MANUAL. A non-technical textbook and field guide on installation and servicing of LPG equipment and appliances. Published by B-P News in 1944. Price \$4.00—10,000 copies in use.

1952

BUTANE-PROPANE POWER MANUAL. By Carl Abell, Editor of B-P News. The most complete and authoritative manual on LPG carburetion. Published in 1952. Price \$3.50—5,000 copies in use.

HEADQUARTERS FOR L.P. GAS INFORMATION SINCE 1931

Skelly Oil Co.



Don Barton

Promoted to sales manager, Skelgas Division of the Skelly Oil Co. is Don Barton, a veteran of more than 20 years with the company's liquid propane gas business, and for the last four years, director of the

advertising and sales promotion department for Skelly and Skelgas.

Beginning his career in the early days of the L. P. gas business, Barton originally worked as a clerk in a Skelgas division office at Omaha, Nebr., in 1929. He became manager of this office in 1931 and then followed a series of duties and promotions through the Kansas City office and the field sales organization in the state of Iowa, where his work with Skelgas qualified him as one of the organization's authorities on their vast rural market.

Whirlpool Corp.



Ralph Carlson

Several changes in sales department personnel and the appointment of Ralph Carlson as regional sales manager of a newly created territory for Whirlpool Corp. were announced recently by sales manager John M. Crouse. Mr. Carlson takes over the sales territory of Minnesota, North and South Dakota, Nebraska and Iowa.

Harry Kane, recently appointed special field sales representative, has been named regional sales manager for the western Pennsylvania and western New York region, replacing Charles Klein, resigned.

Two additional changes include Lawrence L. Kurth, formerly assistant to John Crouse, to office and traffic manager; and Howard Fairman, previously sales office manager, to assistant to Robert E. Beckwith, director of market research.

White Products Corp.

A. D. Vining has been named executive vice president and general manager at White Products Corp., manufacturers of gas and electric water heaters at Middleville, Mich., according to announcement by Edward Lamb, president.

U. S. Air Conditioning Corp.

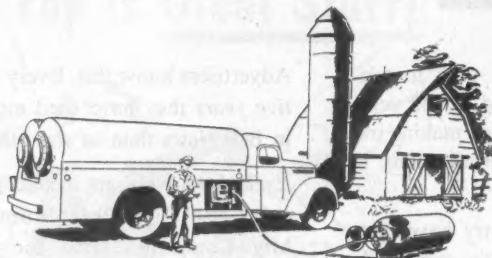
The appointment of Walter R. Murray as sales promotion manager of the United States Air Conditioning Corp. has been announced by L. P. Hanson, vice president in charge of sales.

Murray was formerly with Vance Pidgeon & Associates Advertising Agency, Minneapolis. Prior to that he was with the Merchandising Division of Minneapolis-Honeywell Regulator Co.

Trane Co.

Two personnel additions in the heat transfer sales department of The Trane Co., manufacturers of air conditioning, heating and ventilating equipment, have been announced by H. C. Rooks, vice president.

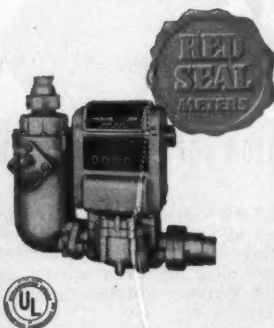
Ellsworth A. Brown, Jr., has been appointed assistant to the manager of process heat transfer sales. Brown has a B.S. degree in mechanical engineering from the State University of Iowa, and an M.S. from California



Why work blind?
... when accuracy is so easy
with Red Seal Meters

No need to rely on guesswork or inaccurate gauges when filling customers' tanks! Do it the easy, accurate way, with this dependable Red Seal LP-gas meter. Tells at a glance exactly how many gallons you've delivered, and permits fast, dependable fills. With a Print-O-Meter register, it helps build business by giving your customers positive, meter-printed proof of full delivery.

The Red Seal is a complete, approved truck metering system in one package. Famous for simplicity, sustained accuracy, and low maintenance costs. Designed specifically for LP-gas pressures. More in use than any other make. Ask for Bulletin 779-LP.



NEPTUNE METER COMPANY • 50 WEST 50TH STREET
NEW YORK 20, N. Y.

Branches

Atlanta • Boston • Chicago • Dallas • Denver
Los Angeles • Louisville • No. Kansas City, Mo.
Philadelphia • San Francisco • Portland, Ore.
Canadian Factory, TORONTO 14, ONT.

Institute of Technology.

Appointment of Vernon R. Anderson as assistant to the manager of aircraft equipment heat transfer also was announced. He has a B.S. degree in mechanical engineering from Stanford University.

Selas Corp. of America



T. G. Thurston

Thurman G. Thurston has been appointed by Selas Corp. as its representative in the Cleveland, Ohio territory.

A native of Cleveland, educated at Case Institute of Technology, Mr.

Thurston served as a development and sales engineer for Bryant Industrial Division.

Mr. Thurston will have his office at 1241 Commonwealth Avenue, Cleveland 24.

United States Rubber Co.

Kent A. Blakeslee has been named assistant to Warren A. Tipton, general sales manager, mechanical goods division, United States Rubber Co., it was announced recently.

Mr. Blakeslee, who has been a divisional production planning coordinator, will assume the duties of the new post immediately in the company's general offices at 1230 Avenue of the Americas. He joined the rubber company in 1950 as a sales training assistant in the mechanical goods division. Formerly he was affiliated with the S.O.S. Co. of Chicago as an administrative assistant, after serving as personnel director for Central Republic Co., Chicago investment house, for several years.

The mechanical goods division of U. S. Rubber handles the production, distribution and sales of industrial rubber products including conveyor belting, V-belts and hose.

Fuelane Corp.

Walter E. Donovan has been appointed advertising manager for Fuelane Corp., Liberty, N. Y., marketers of Happy Cooking Metered Gas Service throughout Northeastern U. S.

Mr. Donovan was formerly with The Brooklyn Union Gas Co. as supervisor of advertising production. He came to Brooklyn Union in 1944 from the Consolidated Edison Co. of New York.

A resident of Massapequa Park,

"I SELL JANITROL BECAUSE ...

Selling one name—
Janitrol—has built
our customer
confidence."



Statement by Mr. W. A. Schuette,
Manager, Hausgas, Incorporated,
leading heating contractor of
Washington, Missouri.

● Hausgas began selling Janitrol because other dealers told them of its trouble-free performance—they were impressed with Janitrol's engineering help in the broad field of LP Gas application . . . the wide choice of models for all types of heating systems.

Mr. Schuette has this to say about the years since: "Your qualified men have more or less become partners with us. This has helped us because in the LP Gas business, no one person can accumulate enough know-how to work all phases himself. Selling one name—Janitrol—has built our customer confidence and with hundreds of installations made, we have experienced no difficulty.

Janitrol has played a big part in our success."



Hausgas credits Janitrol for much of their success. It will pay you, too, to investigate Janitrol. Write today for particulars.

Janitrol

Automatic Heating



SURFACE COMBUSTION CORPORATION • TOLEDO 1, OHIO

DECEMBER, 1953

Long Island, Mr. Donovan will make his home in Liberty.

Stiglitz Corp.

James G. Callaway, Jr., has been named representative for the Stiglitz Corp., Louisville, Ky., manufacturers of "Warm-Aire" heaters and "Sun-Aire" automatic clothes dryers. Mr. Callaway's territory includes Kansas, Missouri and Nebraska.

General Gas Corp.

Rawlston D. Phillips, president of General Gas Corp., today announced

the appointment of Norman E. Wooters, former president of Gas Refrigeration Co., Inc., as General Gas' manager of sales with headquarters in Baton Rouge.

Mr. Wooters joined General Gas last spring as a field sales advisor. Mr. Phillips said that in his new position Mr. Wooters will aid I. W. Patterson, General Gas vice president and general sales manager.

Mr. Wooters, a former official of the American Gas Association, served as president of Gas Refrigeration Co., Inc., in New Orleans from 1946 through 1952.

General Gas Corp. recently announced the appointment of Harry D. Richardson as general manager of its subsidiary, Gamma Industries, Inc.

Mr. Richardson was formerly associated with E. I. du Pont de Nemours & Co., the University of Alabama, and Louisiana Polytechnic Institute.

Gamma Industries produces radiography machines which utilize radioactive isotopes.

Sid Richardson Gasoline Co.

The Sid Richardson Gasoline Co. announces the appointment of H. L. Schmidley as manager of its Minneapolis Sales Division.

Mr. Schmidley was with the Richardson company in its Fort Worth, Texas, office before being transferred to Minneapolis, and prior to his association with this company was employed as an engineer with the Consolidated Vultee Aircraft Corp. of Fort Worth, Texas.



H. L. Schmidley

Rector Well Equipment Co., Inc.

Dale A. Black & Associates, Portland, Ore. have been named as distributor for "Rectorseal," thread sealing compound, according to C. L. Cron, manager of Rectorseal Division, Rector Well Equipment Co., Houston, Texas.

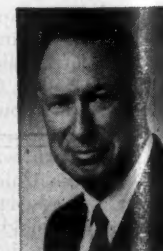
"Rectorseal" is widely used in the natural gas and LPG field because it is impervious to petroleum and all of its fractions.




Dale A. Black

Handley-Brown Heater Co.

Mr. Harold E. Handley, president and general manager of the Handley-Brown Heater Co., Jackson, Mich., announces the appointment of Mr. E. I. (Gene) Jones as representative for Handley-Brown



E. I. Jones



LPG DEALERS!

Supply your customers with FLINT LPG TANKS and watch sales increase! FLINT TANKS offer many outstanding features that make them safer; easier to handle; easier to install. FLINT TANKS are built in strict accordance with ASME code for 200/250 psi working pressure and meet all state requirements. Seven sizes from 120 to 1000 gallons. Also: 6000, 18,000 and 30,000 gallons.

FLINT STEEL CORPORATION

MEMPHIS, TENNESSEE
P. O. Box 3155 Phone 9-3558

in the territory of Texas and Louisiana.

Mr. Jones and his associates will stock Handley-Brown automatic storage gas water heaters in their Dallas Warehouse where all Handley-Brown shipments, into the Texas-Louisiana territory, will originate. This arrangement will mean prompt supply to the trade throughout that area.

Mr. Jones has been active for many years in distribution of equipment for L. P. gas operations in the Southwestern United States. Since 1946 he has headed the E. I. Jones Co. of 4332 Fairfax Avenue, Dallas 5, Texas, which is the present seat of E. I. Jones Co. operations.

American Meter Co.



Wm. N. Donachy

American Meter Co., manufacturers of precision control instruments, has announced the appointment of William N. Donachy and Andrew Seseck to its sales engineering organization.

Mr. Donachy's new territorial assignment covers southern Kansas, western Arkansas and Oklahoma.

Mr. Seseck's new appointment as a sales representative is to the Billings, Mont., district.

Empire Stove Co.



C. H. Schutter

Cecil H. Schutter has been named branch manager for the Kansas City office of Empire Stove Co., Belleville, Ill., according to an announcement by Lee A. Brand, vice president.

Mr. Schutter will headquarter in Kansas City, and serve the Kansas City territory which comprises western Missouri, eastern Kansas, eastern Nebraska and Iowa.

Hamilton Manufacturing Co.

R. G. Halvorsen, Hamilton vice president in charge of sales, today announced that Mr. C. H. Rippe, recently with Gordon Wilkins Appliances in Oakland, Calif., has rejoined the sales staff of the Home

Every

RIGID

Is Work-Tested ...

Before It Leaves the Factory

6" to 60"

...to make sure it gives you the

Best and the Most

wrench service for your money

The reason **RIGID** Heavy-Duty Pipe Wrenches are known for the brutal punishment they can take is because of the toughness built into them, checked part by part and then hard work-tested when assembled . . . not just one wrench in 100 or 1000 but *every last one!* . . . Add the guaranteed repair-free housing, no-slip no-lock jaws, handy pipe scale, easy spinning adjustment nut and comfort-grip I-beam handle and you see why genuine **RIGID** gives you the big value for your money. Buy them at your Supply House.

THE RIDGE TOOL COMPANY • ELYRIA, OHIO



Appliance Division of the Hamilton company.

Mr. Rippe is temporarily assigned to the California area.

Temco, Inc.

Temco, Inc., manufacturers of gas heating appliances and gas clothes dryers, announced recently the appointment of Harry Baird as traffic manager of the Nashville concern.

Mr. Baird comes to Temco from Oak Ridge, Tenn., where he was in charge of motor freight for Carbide

and Carbon Chemical Co., a division of Union Carbide and Carbon Corp.

Tappan Stove Co.

Howard W. Davies has been named a territory manager in southern California for the Tappan Stove Company, A. B. Bitzenthaler, vice president in charge of sales announced recently.

A native Californian, Davies worked as an appliance salesman for the Leo J. Meyberg Co., Los Angeles, before joining Tappan in August.

Hal Batsch To Represent Beals Advertising Co.



Hal Batsch

Harold J. Batsch, of the H. J. Batsch Co., Harrisburg, Pa., will represent Beals Advertising Co., creators of the L. P. gas industry "local level" advertising, in the northeastern states.

A graduate of Penn State, Mr. Batsch has been in the advertising field for the past 20 years, beginning his career in the advertising department of the Syracuse (N. Y.) Post-Standard. After serving as advertising director of several New York State papers, he purchased two papers of his own, and later joined the Fuelane Corporation, Liberty, N.Y.

In representing Beals Advertising Co., he will offer a friendly, helpful counseling service to gas companies, backed by a wealth of combined gas advertising experience, and the complete line of promotional services, stationery, supply items, and premium and gift items now being produced by Beals Advertising Co. for LPG dealers over the country.

Rockwell Returns To Position As Chairman



W. F. Rockwell, Sr.

Col. Willard F. Rockwell, who has resigned as assistant to Secretary of Defense Charles E. Wilson, has returned to his position as chairman of the board of directors of Rockwell Manufacturing Co.

The tour—his third for the Defense Department this year—was made for the purpose of inspecting principal sources of munitions supply for the NATO nations. Colonel Rockwell joined the Defense Department last April 1 at the request of President Eisenhower and Secretary Wilson.

Accepting Colonel Rockwell's resignation, Mr. Wilson said:

"I am sorry that you find it necessary to resign—and I accept your resignation with real regret on my part. I want you to know of our appreciation for your many fine contributions here in the past months and particularly for your recent report concerning conditions in Europe."

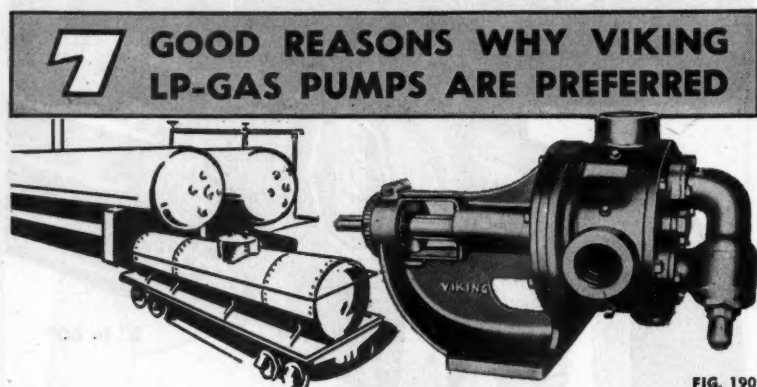


FIG. 190

7 GOOD REASONS WHY VIKING LP-GAS PUMPS ARE PREFERRED

- 1 Thirty-seven models from which to choose. No matter what your problem may be, there is a Viking to fit your needs.
- 2 Five sizes in bulk plant units, 5, 10, 20, 30 and 55 GPM. Three sizes in truck pumps, 20, 30 and 55 GPM.
- 3 All power driven Viking LP-gas pumps are available with a field-proved, dry-liquid mechanical seal.
- 4 A non-lubricated inner bearing is featured on all power driven models.

VIKING LP-GAS PUMP WITH MECHANICAL SEAL 5 TO 55 GPM SIZES

- 5 Safety valve on pump head assures extra protection, relieving pump from excessive discharge pressures.
- 6 Revolvable casing for handy port location. Particularly desirable on truck mounting type.
- 7 Adjustable thrust bearing on both bulk plant and truck mounting pumps. Permits still more service after long, hard usage.



For complete information send for free Bulletin 2304B today.

See our Catalog in the



VIKING PUMP COMPANY
Cedar Falls, Iowa

A Banker's Viewpoint

By Cyril J. Jedlica

Vice President, City National Bank and Trust Co.
Kansas City, Mo.

CREDIT is a very interesting subject to you*, to me and to everyone. You and I use it in our every day personal affairs as well as in our business. Without credit our present economy could not function or exist. It is a tool of business just as important as your tanks, your delivery trucks, and your other equipment. The lack of adequate credit for you and your retail customers can seriously hamper the proper development and growth of your business.

When you originally started your business, no doubt you invested your cash capital in the necessary storage equipment, a truck or two, some tanks, maybe some merchandise to sell, and a supply of gas, and you were ready for business. As your business grew, your needs for additional capital grew also. Soon you were carrying many accounts receivable. Many of your equipment sales were not cash, but payable in monthly payments. More merchandise and more equipment were needed.

Sometimes the need for additional working funds can be partly solved by loans or investment in your business by others, either relations or friends. Sometimes a partnership or a small corporation is the answer to obtaining such investment funds. Frequently, a bank or other financing agency can be the answer either with direct loans or by purchasing the time sales paper, thus releasing your capital funds for your other needs.

Now if you want your banker to be of help to you in any of these ways, your first job will be to see that he has complete confidence in you, your ability, and your business. Unless he understands your business he will be cool and skeptical to your requests. Unless he knows you and your business to be sound and profitable, he will naturally be reluctant to lend his depositor's money to you. You have a

*Presented at the Missouri LPGA annual convention, St. Louis.

Want to give service that sells?



Do it FAST
with RCA 2-Way Radio!

—says C. J. McAllister,
Vice President
and General Manager,
The Parlett Gas Company

"A customer phones in an 'O-G' report, or a request for quick service. Our truck drives up to the door in a surprisingly short time . . . sometimes less than 10 minutes. And when the customer acts enthusiastic about our speedy response, we know we have formed a lasting good impression," reports Mr. McAllister, Vice President and General Manager of one of Maryland's largest LP-gas operations.

"That good impression spreads to neighbors," he continues. "It gives us the best kind of advertising we can get—often leads to new, unsolicited customers. Even our appliance salesmen use 'rapid service' as a point in closing sales.

"Primarily, of course, RCA 2-Way Radio has been a great man-hour and mileage saver," Mr. McAllister adds. "We normally use a pre-scheduled trip-ticket arrangement. About 90% of the time we could not locate drivers for rerouting after they had gotten out into

the rural areas. RCA 2-Way Radio has resulted in far superior utilization of man-power with a substantial cut in the overtime needed to complete a day's work. We have less backtracking . . . less wear and tear every month."

In actual performance, RCA 2-Way Radio proved itself in this installation as it has in many others. Antennas on the roofs of the Parlett offices enable RCA communication equipment to reach vehicles 30 miles away, in every direction. Coverage is excellent over the entire operating area.

Do it best with RCA 2-way radio
Easy to use as your telephone • Compact—takes no more space than a spare tire • Tough—stands rough treatment in service • Reliable—engineered by world leaders in radio • Practical—low-cost operation.

And remember, nationwide facilities are provided by the RCA Service Company. For further details mail the coupon below.

Radio Corporation of America, Communications Equipment
Dept. 204X, Building 15-1, Camden, N. J.

Please send me your free bulletin, "15-Minute Service When You Need It."

NAME _____ TITLE _____

COMPANY _____ ADDRESS _____

CITY _____ ZONE _____ STATE _____

☐ Have an RCA Communications Specialist get in touch with me.



RADIO CORPORATION OF AMERICA
COMMUNICATIONS EQUIPMENT CAMDEN, N. J.

selling job to do. Even though he may know you well as a neighbor and fellow business man, does he know and understand your business and its peculiar problems? It is your problem to see that he does.

One way of acquainting the banker with your business is through the use of financial statements, both balance sheet as well as operating statements. I assume of course that each of you have monthly statements available to you. Whether your business is large or small, it seems elementary that you would want some information each month as to where you are and what progress you have made. Your banker may not want to take the time to see each monthly statement, but surely he would be interested in statements at least every six months, and by a comparison of these subsequent statements he will be able to determine the worth and trend of your business. It is also very helpful to have the banker visit your place of business from time to time and have him actually see how you conduct your business.

Your statement is a valuable index

as to the net worth and progress of your business, and a detailed study of the items included will give much information regarding how you conduct your business. In making an analysis of the statement, credit men and bankers make use of various ratios to determine trends in operations. Possibly the most common ratio is the one of current assets to current liabilities. As all of you know, current assets will generally be cash on hand and in bank, accounts receivable and merchandise on hand. These are called current assets because they can usually be converted quickly into cash with which to pay the current liabilities. Current liabilities are generally those debts or accounts which are due now or over a short period of time, usually including all obligations due within one year. If the current assets are substantially more than the current liabilities, your business would be said to be in a liquid condition. This ratio will vary widely in different lines of business, but a ratio of two or three to one is generally desirable. However, if the current liabilities are

more than the current assets, this would indicate that accounts payable would not be paid as agreed and would be a danger signal to watch.

However, there is no magic formula, no single ratio that can be employed that will tell all about a statement. There are many ratios, commonly used, each of which adds a little information to the study. Another ratio commonly used is the ratio of total debt to net worth. You can well see that if the total debt is as much as or more than the net worth of your business that your creditors have as much or more of an investment than you have, and such a condition can easily get out of control. Another ratio is the relationship of "Fixed Assets" to "Net Worth." In your business, as in many others, a heavy investment in fixed assets is required. Obviously all of your capital cannot be tied up in fixed assets as some of your capital is needed for working capital. If the ratio of fixed assets to net worth approached or exceeded one to one, it would indicate a condition of possible slowness in the ability to pay accounts promptly.

L.P.G. yields utmost heat with

holly

NarrowWall

HERBOLD'S Since 1908
LEATHER GOODS - TRAVEL CASES
HAND BAGS - GUNBELLS - GIFTS

917 S. Arroyo Pkwy.
Pasadena 2, Calif.

Sept. 25, 1955

Holly Manufacturing Co.,
917 S. Arroyo Pkwy.,
Pasadena 2, Calif.
Attn. Mr. F. Farmer, Sales Mgr.

Gentlemen:

We consider the Holly NarrowWall to be an ideal wall heater for retail stores.

Since installing our NarrowWall, we have noted with satisfaction how safely and well it keeps our customers comfortable, with complete safety for these and our entire sales personnel.

One of the most important advantages, in my opinion, is the fact that the venting eliminates from the air the not inconsiderable amount of moisture which an unvented appliance would be constantly pouring out into our store.

Our Holly takes up no floor space, giving full flow to store traffic. Also, the secondary heat exchanger provides us with extra warmth at no extra fuel cost.

The attractive streamlined front panel is in harmony with modern store design and merchandise display.

It's a pleasure for us to be able to recommend the Holly NarrowWall for our stores of every kind and size.

Very truly yours,

HERBOLD'S
F. Farmer

Secondary Heat Exchanger (Pat. No. 2602441, exclusive with NarroWall, is AGA approved as an integral part of the heater. It draws air from floor level, heats it and discharges it as additional warm air. It assures cool walls above the heater.

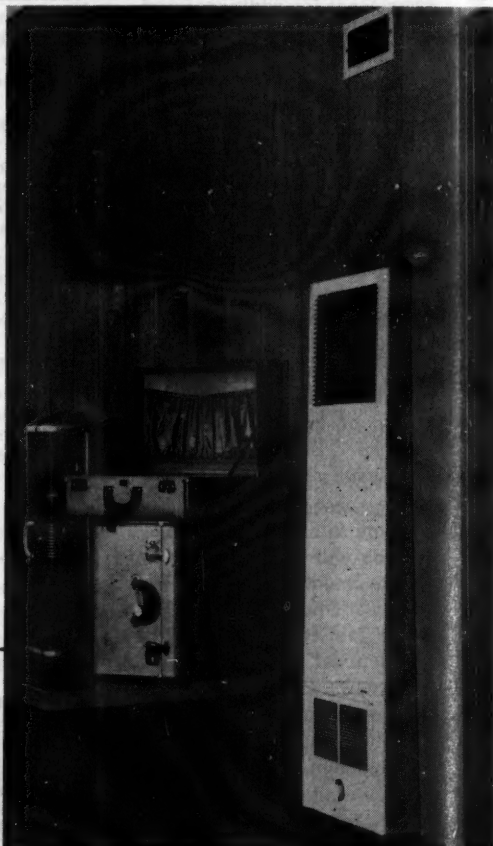
HOLLY MANUFACTURING CO.
917 S. Arroyo Pkwy., Pasadena 2, Calif.

Without obligation please send me complete facts about Holly NarroWall designed for L. P. gases.


NAME.....

ADDRESS.....

CITY..... ZONE..... STATE.....



Easy to install
Fully guaranteed



this
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The ratio of inventory to sales is very interesting and points out not only the turnover in your inventory, but may indicate also, if this ratio is out of line, such conditions as shopworn and unsalable merchandise, etc.

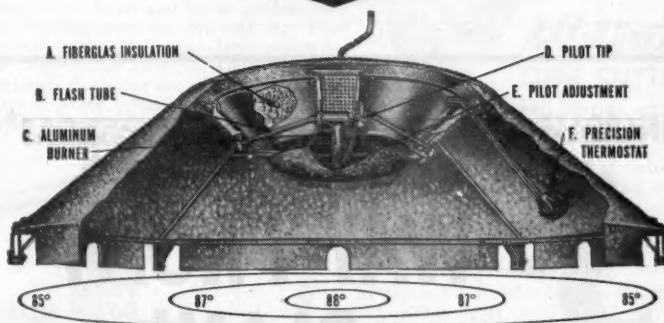
Most banks will also have average or standard statements for each industry with standard figures and ratios for each business classified by size, and a comparison of your statement with such standard studies will point out the strong as well as the weak points of your setup. A comparison of your statement with your previous statements also helps to determine the trend of your business in sales as well as profits, etc. Go over your statement with your banker and ask his advice and suggestions on it.

Banker Can Help

In many cases the banker will be able to help you with unsecured credit for a period of ninety days to six months. This type of credit is largely to tide over the merchant for his peak periods of business and inventory. Banks generally cannot make capital loans, as they are lending demand deposits and they should not lend their customers' money for long periods of time or for purposes or ventures that may have hazard. If unsecured credit is not justified, loans may be arranged with collateral of various types, including cash values of life insurance, real estate loans, endorsement, chattel mortgages on cars, trucks and equipment, and in some cases loans on inventory of merchandise.

Some banks aid their merchants by "floor plan or wholesale financing." In such cases a chattel mortgage or trust receipt is taken on the individual pieces of merchandise and repayment is made as the article is sold. In some cases the merchandise is placed in a bonded warehouse and each piece is released when sold and that part of the loan paid covering this release. Sometimes this also may be done under a field warehousing arrangement, but this is generally not practical unless the loan amounted to \$25,000.00 or more. In many cases, these floor plan or warehouse loans are also protected by a repurchase agreement executed by the manufacturer to repurchase the merchandise upon default by the retailer. Such an agreement gives the bank an outlet for any repossessed merchandise and in addition protects the bank against

Stock the Gas Brooder with a PROVEN Sales Record!



25 YEARS OF LEADERSHIP MAKES A. R. WOOD Brooders Sell BEST Today!

The above cut-away drawing shows the reasons why A. R. Wood Radiant gas brooders are so dependable . . . why A. R. Wood brooders with a proven 25 year record of satisfactory service, have become the best selling brooders in the poultry business today!

- | | |
|--|--|
| <p>A. Fiberglass Insulation . . . retains heat better. Reduces operating costs.</p> <p>B. Flash Tubes . . . light all burners from one pilot should other pilots go out.</p> <p>C. Aluminum Burners . . . are removable. Easy to clean . . . easy to reassemble after cleaning.</p> | <p>D. Pilot Tips . . . of stain- less steel. Are non-corrosive, non-clogging.</p> <p>E. Pilot Adjustment . . . individual for each pilot light in the brooder.</p> <p>F. Precision Thermostat . . . keeps temperatures constant under all weather conditions.</p> |
|--|--|

Uses either liquefied petroleum or natural gas!

BUILD YOUR VOLUME WITH THE GAS BROODER THAT SELLS ITSELF!



Sell the brooder that consistently out-performs any other brooder on the market. Many years research and experience by the A. R. Wood Company has developed a brooder with superior design and performance features that pay off to you in sales!

Write Now For Complete Information!

A. R. WOOD MFG. CO.

SANTA CRUZ, CALIFORNIA
P. O. BOX 602-3

LUVERNE, MINNESOTA
P. O. BOX 97-3

depreciation, obsolescence and price changes. You can see that with such a guaranty, the bank will be much more inclined to service your needs.

Many banks are able to finance eligible sales of furnaces, hot water heaters, etc., eligible under FHA Title I for you. However, some banks at present are not cooperating under this desirable plan.

Banks also should be able to be of service to you all in handling your time sales appliance paper. In my opinion this paper properly made and

handled with adequate down payment and length of term is sound and desirable as well as profitable. Your customers are also the banker's customers. The banker should have faith in the community and in those people whose credit is good. Our experience has been good, as has been the experience of practically all others.

Most of this paper is sold on a repurchase agreement or fully endorsed by the dealer. I believe that it is natural and desirable for this to be so. You want your banker or finance

company to help you with this paper. Then you should make it desirable for him and put it in such form that it is safe for him to handle. In the first place, if proper credit judgement is used by both you and your banker, most of the paper will pay out as agreed and only a very small percentage will result in return or repossession. On this small percentage of comebacks, you are better able to handle them than the banker is. To begin with you have the trucks to pick them up, the facilities to recondition, the sales force to sell them, the know how to get the job done. In the banker's hands this merchandise is a misfit and must be sold at a distress price.

Securing the Loan

Many of these financing arrangements also require a reserve or hold-back to further secure the paper. In many cases the bank allows the merchant a participation in the finance charges. Sometimes a reserve of 2% 3% 5% is left with the bank as a hold-back reserve and any repossession losses are charged to this reserve. What I am trying to suggest is this—you need financing—you need an outlet for this time sales paper—then sell your banker on your problem—make the paper safe and desirable for him so he will cooperate.

Bank financing is more acceptable to your customers than finance company service. Bank financing makes for better customer relations, and you want to keep your customers, each and every one of them.

But some of you will say "suppose all of that is true, but my banker is not interested." What then? I said in the beginning that you have the problem. But, I think it can be solved and by you. If you do not have adequate bank credit and a proper outlet for your time sales paper, I think your solution is to sell your banker a bill of goods. Sell him that you are honest, reliable, capable and have a profitable, growing business that is serving the needs of your community. Show him your financial statements; educate him in your business. Convince him that by helping you, he is helping the community; that he is helping his customers to a better living, a higher plane of living and importantly, also, in so doing he is making a profit for himself from a desirable portfolio of loans.

INCREASE YOUR PROFITS WITH THE PHILGAS*

5-WAY PROFIT PLAN!



- 1. High Quality Product**
- 2. Dependable Supply**
- 3. Experienced Engineering**
- 4. Effective Marketing Help**
- 5. Operational Assistance**

*Philgas is the Phillips Petroleum Company trademark for its high quality propane-butane LP-Gas or bottled gas.

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Sales Department • Bartlesville, Oklahoma

Offices located in Amarillo, Tex., Atlanta, Ga., Chicago, Ill., Denver, Colo., Des Moines, Ia., Pontiac, Mich., Indianapolis, Ind., Kansas City, Mo., Milwaukee, Wis., Minneapolis, Minn., New York, N. Y., Omaha, Nebr., Raleigh, N. C., St. Louis, Mo., Tulsa, Okla., Wichita, Kan.

New Recommendations and Amendments By ICC

A recent ICC order No. 12 has included certain amendments to its regulations which concern the LPG industry. According to a bulletin issued by the national office of LPGA, these changes are as follows:

ADD Exception (k) (12) to Sec. 73.34 (15 F. R. 8284, Dec. 2, 1950) (49 CFR 73.34, 1950 Rev.) to read as follows:

Sec. 73.34 Qualification, maintenance, and use of cylinders. * * *

(k) * * *
(12) Cylinders made in compliance with specifications ICC-4B, ICC-4BA (Sec. 78.50 and 78.51 of this chapter) or ICC-26-300, used exclusively for liquefied petroleum gas which is commercially free from corroding components, may, in lieu of the periodic hydrostatic retest, be given a complete external visual inspection at the time such periodic retest becomes due. When this inspection is used in lieu of hydrostatic retesting, subsequent inspections are required 5 years after the first such inspection and periodically at 5-year intervals thereafter. Inspections shall be made only by competent persons and the results shall be recorded on a suitable data sheet, the completed copies of which shall be kept as a permanent record. The points to be recorded and checked on these data sheets are: Date of inspection (month and year); ICC specification number; cylinder identification [registered symbol and serial number, date of manufacture, and ownership symbol (if needed for adequate identification)]; type cylinder protective coating (painted, galvanized, etc. and statement as to need of refinishing or recoating); conditions checked (leakage, corrosion, gouges, dents or digs in shell or heads, broken or damaged footing or protective ring, or fire damage); disposition of cylinders (returned to service, to cylinder manufacturer for repairs, or scrapped); a cylinder which passes the inspection prescribed shall have the date recorded in the manner presently prescribed for the recording of the retest date, except that an "E" is to follow the date (month and year) indicating requalification by the external inspection method.

This order is based upon a detailed historical survey of L. P. gas cylinder experience and hydrostatic testing conducted by LPGA's technical committees over a period of years. Activity to bring about this change was initiated by LPGA over 2 years ago.

WAY OUT IN FRONT IMPERIAL TUBE WORKING TOOLS

... their quality speeds your work

These outstanding tube working tools make it easy to do faster and better cutting, flaring, bending, reaming, and refacing. They are built to the quality standards which for years have made Imperial Tools the overwhelming favorites for tubing work. For safety in every installation depend on Imperial Tubing Tools.



Hi-Duty® FLARING TOOL

Speedy single-nut clamping. Makes precision S.A.E. flares faster and better. No. 300-F flares 3/16", 1/4", 5/16", 3/8", 1/2", 5/8" O.D. tubing. Many other models and sizes to choose from.

Catalog No. 621 describes Imperial LP-Gas Fittings, Tube Working Tools, Brass Pipe Fittings and Shut-off Valves. Ask for your copy.



LP-GAS FITTINGS

For safety's sake use the best in fittings—insist on Imperial Flared Tube Fittings. Broad line. Listed by Underwriters' Laboratories, Inc.



VALVES

Imperial also offers an outstanding line of shut-off valves for multiple type LP-Gas installations.

THE IMPERIAL BRASS MFG. CO., 1210 W. Harrison St., Chicago 7, Illinois

IMPERIAL

FITTINGS · VALVES · CONNECTORS
TOOLS for cutting, flaring, bending
and swedging.

AUTOMATIC INCINOR GAS-FIRED INCINERATOR

A "MUST" in Homes with Automatic Heat
A FULL-PROFIT LINE • NO TRADE-INS

INCINOR IS APPROVED BY A.G.A. LABORATORIES

ACT NOW FOR COMPLETE DETAILS

INCINERATION DIVISION, BOWSER, INC., CAIRO, ILL.

More Underground Storage Planned by Anchor Petroleum

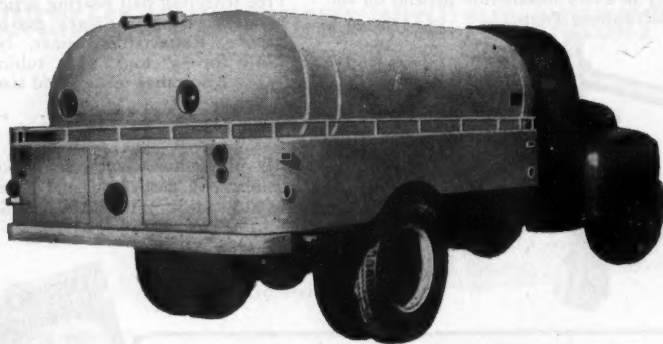
Drilling will begin immediately near Bath, N. Y., to create underground storage cavities for liquefied petroleum gas, Anchor Petroleum Co. announced recently.

F. A. Shellhorn, vice president in charge of transportation, said the first storage well is to be completed early next year and will have a capacity of 50,000 barrels. He disclosed that two

other wells of the same size are planned.

Anchor now has products available from underground storage plants in Hattiesburg, Miss., and Midland, Texas. The capacity of Anchor's Hattiesburg storage will soon be up to 16-million gallons and the Midland project will ultimately provide storage for 20-million gallons.

SUPERIOR MAKES IT BETTER!



You Get More of the Features That PAY OFF In Superior Delivery Trucks

*CAPACITY pays off and this delivery has it — 1400 to 1600 gallons.

*MAXIMUM SAFETY pays off and this delivery has it — 250 and 265 p.s.i.

*HIGH UNLOADING RATE pays off and you get maximum delivery at all times.

*QUALITY CONSTRUCTION pays off and this delivery has it — top quality material and workmanship assured by insurance company and national board inspections.

Whatever your requirements in transport and storage equipment for LP gas or anhydrous ammonia — Superior makes it and makes it better.

PIONEERS
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TRANSPORT
STORAGE
EQUIPMENT



Superior
MFG. COMPANY

4110 N.E. EIGHTH AVE.
AMARILLO, TEXAS

ALL INQUIRIES ANSWERED PROMPTLY

The Hattiesburg plant has a tank car loading rack capable of loading 20 cars and a truck loading rack which will accommodate four trucks at one time. The tank car loading rack at Midland will hold 10 tank cars. The truck terminal there, which is designed for loading two different products at the same time, can load up to 4 trucks at one time. All these facilities are designed so they can be easily expanded as it becomes necessary.

Modern dehydration and testing equipment is being installed to insure the highest quality butane and propane for Anchor's customers.

Mr. Shellhorn stated that the Bath, N. Y., storage project is, as far as he knows, the first LPG underground storage well project for LPG in the east, from which products will be available for all northeastern states users. It is one more link in Anchor's nationwide coverage in storage and production facilities. For the Bath project, Anchor has acquired 43 acres of land for the wells which will be drilled 3,500 feet before the sub-surface salt domes are washed out.

"Loading racks capable of filling 15 tank cars will be built," he said. "Anchor's comprehensive underground storage facilities—plus strategically located Anchor plants all over the country and Anchor's great fleet of tank cars make it possible for us to make prompt deliveries of LPG anywhere in the country."

Underground storage near areas where LPG has formerly been used only for hot water heating, cooking and some industrial uses, will now make it possible for LPG to be considered as space heating fuel.

"We feel," Mr. Shellhorn said, "that LPG will do much to change the heating picture in these areas and will become a major economic factor."

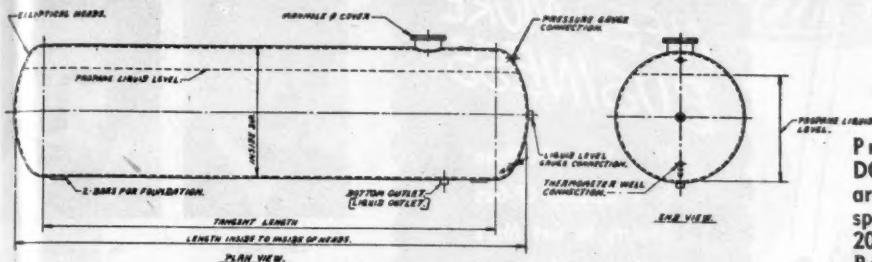
Mutual Liquid Gas Acquires Washington Firm

The American Propane Sales Co., with operations in Seattle and Bremerton, Wash., has been purchased by the Mutual Liquid Gas & Equipment Co., Los Angeles, according to an announcement by Joe Fagan, president of the latter company.

Expressing a belief that a big future lies ahead in the northwest for LPG, Mr. Fagan said the Washington company will be operated as a wholly-owned subsidiary of Mutual.

Extensive remodeling work at the Seattle plant, already under way, will increase storage facilities to 45,000 gallons, and is part of the ex-

PROPANE STORAGE TANKS by DOWNINGTOWN



Propane Storage Tanks at DOWNINGTOWN are electric arc welded construction; welds spot checked with x-ray for 200# W.P., in accordance with Paragraph U-69 of A.S.M.E. Code for Unfired Pressure Vessels — Hydrostatic tested at 400# W.P. or 250# W.P. according to Paragraph U-201 of A.S.M.E. Code and the A.P.I. — A.S.M.E. Code. Construction meets Codes as specified above, National Board of Fire Underwriters and other approval agencies' requirements. We'll be glad to comply with your request for further details.

TANK DIMENSIONS

18000 GAL. TANK.		GROSS CAPACITY U. S. GALLONS	30000 GAL. TANK	
	15480	APPROX. PROPANE CAPACITY GAL. (86% OF GROSS)		25800
	200	WORKING PRESSURE A.S.M.E. PAR. U-69 CODE		200
	94"	INSIDE DIAMETER, INCHES		106"
	47'-4"	TANGENT LENGTH		62'-6"
	51'-3"	LENGTH INSIDE TO INSIDE OF HEADS		66'-11"
	25.4	WEIGHT TONS (APPROX.)		41.3

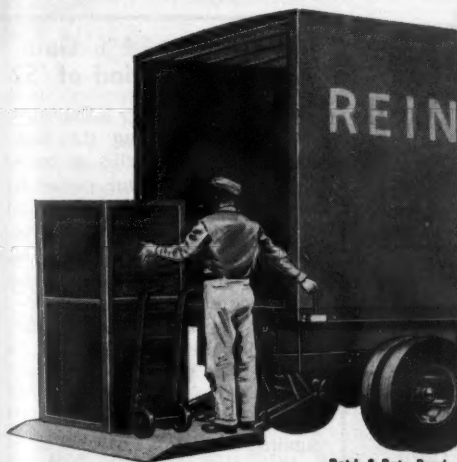


DOWNINGTOWN IRON WORKS, INC.

DOWNINGTOWN-PENNA.

STEEL AND ALLOY PLATE FABRICATION AND HEAT EXCHANGERS

DIVISION OF
PRESSED STEEL
TANK COMPANY



Patd. & Pats. Pend.
U. S. and Foreign

NOW! 4 MORE WAYS TO CUT DELIVERY COSTS

CUT
STANDING
TIME

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DAMAGE

A powerful freight elevator on the back of your truck that lifts or lowers *Any* kind of load *Faster* in perfect *safety* to operator and merchandise. Now Anthony Lift Gates do *All* operations faster by eliminating extra time-consuming operations. Uses only ONE cylinder and ONE control lever.

New Brochure shows *HOW*—you can cut *your* trucking costs up to 50%. Send for *your* copy today—no obligation.



SPEED UP
LOADING

UNLOAD
FASTER

DOES ALL OPERATIONS—
OPEN, CLOSE—LIFT, LOWER WITH
ONLY ONE CYLINDER

ANTHONY THE WAY TO MAKE TIME PAY

LIFT[®] GATES

ANTHONY COMPANY

STREATOR, ILLINOIS • DEPT. 16F

May the Spirit
of Christmas
Last all the year
thru
And bring joy
and gladness
To friends—old
and new!



Gas
EQUIPMENT COMPANY, Inc.
P.O. BOX 566
2425 Caroline
DALLAS, TEXAS

BROWER GAS BROODERS



Burn
Natural
or
Butane
Gas

Important Selling Features YOUR CUSTOMER WILL WANT

Chicks are SAFE — Robertshaw 100% Shut-Off Valve turns off gas if pilot goes out. 1" fiberglass insulation between deflector plate and hover top conserves and directs heat against baffle plate. Radiator, deflector and baffle plate spread heat evenly. Thermostat controlled. Draft-proof ventilation. Adjustable legs. Thermometer. Two sizes—60" and 72" canopies.

write for
catalog and low dealer prices

BROWER MFG. CO.

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Quincy, Illinois

World's Largest Line of Poultry Supplies

NEED MORE BUSINESS?

For 7 Years We Have
Been Helping LP-Gas
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Business with Direct-
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WRITE FOR SAMPLES AND PRICES

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OKLAHOMA CITY, OKLA.



Specialists in
LP-Gas Advertising

Developers of the
Official LP-Gas
Emblem!

Handy Bender says



"In an 'el
of a Shape
with Fittings?"

Got yourself in an 'el of a shape . . . consuming time and money using old-fashioned "el" fittings to turn corners? Then try a Handy. Your Handy Bender bends as you go, right on the job . . . makes smooth, even bends in any pipe or tubing from $\frac{3}{8}$ " to $1\frac{1}{8}$ " O.D., with a twist of the wrist. Your savings on your next job will pay for your Handy Bender. Get one tomorrow.

Ask your
supply house,
or write today to:

**HOLSCLAW
BROS., INC.**
414 WILLOW ROAD
EVANSVILLE, IND.

Handy



**Handy
Bender**



Joe Fagan



G. L. Frazer

pansion program planned to expedite trade in the northwest and Alaska.

Officers of the company assisting Mr. Fagan in the operation of the new company are: Wyman G. Reynolds, vice president and G. L. Frazer, secretary-treasurer.

All personnel of American Propane will be retained, including Ed Merritt, resident manager, and Roland Seim, office manager.

Texas Butane Firm Heads Charters

The Central Butane Co. of Waco, Texas, capitalized at \$473,985, headed the list of new corporations approved by Secretary of State Howard Carney recently.

Incorporators of the new firm were J. A. Farrar, R. E. L. Glasgow and Edwin Cummelt, Sr.

LPG Shows 14% Gain Over Same Period of '52

Total demand for LPG rose 14 per cent during the first eight months of 1953 as compared with the same period a year ago, according to the latest monthly survey from the United States Bureau of Mines.

Total demand for the first eight months amounted to 80,891,000 barrels compared with 70,953,000 in 1952.

Of these totals, exports accounted for 1,974,000 barrels and domestic demand 78,917,000 against export of 1,519,000 barrels and domestic demand of 69,424,000 in 1952.

Production of LPG during the eight month period rose to 10.6 per cent over the year-ago level, with output amounting to 22,473,000 barrels against 20,322,000 barrels in the first eight months of 1952.

Stocks on hand totalled 825,000 barrels at the end of August compared to 771,000 barrels in July and 618,000 barrels in the comparable period a year ago.



She's sure of **HOT** hot water!

White WATER HOTTER

15 strong selling features close sales fast!

20-gal., 30-gal., 40-gal. and 60-gal.

Guaranteed by Good Housekeeping

Keep customers happy—make every one of them a booster for more sales. Build business that grows! With *White Water-Hotter* you offer complete, long-lasting satisfaction . . . and there are 15 different ways that you can prove it!

FILM OF FLAME
Single port burner in gas *Water-Hotter* means no clogging EVER. Amazingly fast "pick-up" means **PLENTY** of hot water always.

Plus 14 Built-in Quality Features
Every one a super-salesman in your store . . . a super-servant in your customer's home.

WHITE PRODUCTS CORPORATION
Dept. BP-12, Middleville, Michigan
Export Office: 201 No. Wells St., Chicago 6



Water Heating Specialists
Since 1930

White WATER-HOTTER
AUTOMATIC WATER HEATERS
For LP-Gas

For bigger profits tomorrow,
write **White TODAY!**

Mutual YOUR FIRST CHOICE



Here you have the finest torch for heating and melting designed and built by combustion engineers and expert craftsmen with years of field "know how." You can easily sell Mutual products to plumbers, utility and maintenance men with absolute confidence.

Demonstrate this torch to your prospect; let him light it, adjust it and work with it on a job or two — and you've made a sale.

The gas-air induction system located well back of the torch tip prevents flame from blowing out. The cool handle and excellent weight balance are sales points. In performance and appearance this torch is a tool your prospect can be proud to own.

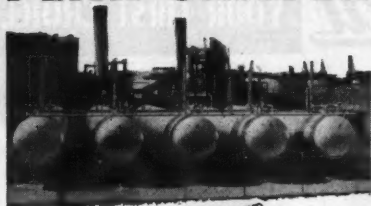
Sell LP-Gas and Mutual torches and furnaces. You will make friends and build fuel accounts that will stay with you for years. Be sure to get our new catalog covering the complete Mutual line today.

Member LPGA

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LIQUID GAS EQUIPMENT CO., Inc.
3638 WEST IMPERIAL HIGHWAY, INGLEWOOD, CALIF.

PEAK SHAVER



BY **DRAKETOWN**

This packaged propane plant designed, engineered and built by Draketown, provides a completely interchangeable fuel for natural gas.

Draketown can design and build one for you, within your budget, to take over all or part of your load at the turn of a valve.

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AUGMENTATION
100% TOWN OR PLANT SUPPLY**

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Gas Fired Unit Heater

55,000 to 500,000 B.T.U.

FOR USE WITH
NATURAL, MANUFACTURED,
MIXED, LPG AND LP GAS-
AIR MIXTURES



Grazier Elected President of American-Standard



Joseph A. Grazier

Joseph A. Grazier has been elected president of American Radiator & Standard Sanitary Corp., succeeding Theodore E. Mueller, who was elected chairman of the board of directors, it was an-

nounced recently.

Mr. Grazier has been serving as president since June, and before that was executive vice president. He is also a director and member of the executive committee of the corporation.

The new 50-year old president began his association with American-Standard in 1937 as a staff member in the office of the secretary. He became assistant secretary in 1939 and secretary eight years later. In 1951 he was elected vice president and secretary, and a year later became executive vice president.

A graduate of Lafayette College and the Law School of the University of Pennsylvania, Mr. Grazier began his career in 1928 with the law firm of Sullivan & Cromwell, and served with that firm until joining American-Standard in 1937. He is a member of the Association of the Bar of the City of New York, and the Council on Foreign Relations.

Mr. Mueller had served as president of the corporation since 1946. He began his association with American-Standard in 1904 as a pattern maker's apprentice, and rose to successively higher positions in the manufacturing field. He was vice president, general manager of manufacturing, prior to his election as president.

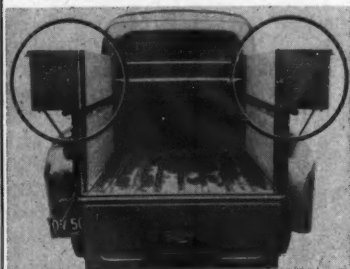
California Firm Expands

Natural Gas Equipment, Inc., manufacturers of gas burning and regulating equipment, has just purchased and moved into new and larger quarters according to an announcement by J. V. Thomas, president.

The new property, located at 804 South Fair Oaks Ave., Pasadena, Calif., consists of a modern warehouse and air-conditioned office of approximately 15,000 sq. ft. A total investment of about \$450,000 is represented in land, building, equipment and inventory.

KARYALL COMPARTMENTS

help you earn more profits



KEEP YOUR TOOLS ORGANIZED AND
SAVE TIME ON YOUR SERVICE CALLS

- Karyall Compartments convert any 1/2, 3/4 or 1 ton pick-up truck into a handy mobile service unit.
- Complete with brackets for easy installation.
- Immediate delivery from our complete stock.

Call Atlantic 1-0470
or write for prices today

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Company.....
Address.....
City..... State.....

KARYALL BODY, INC.
8221 Clinton Road Cleveland 9, Ohio
Department B

First See GRIFFITHS for CONVERSION PARTS

We can supply a wide assortment of spuds, orifices and other parts for converting domestic and commercial equipment to any type gas. Also, a complete line of repair parts for all types of gas meters.

Write for Catalog

E. F. GRIFFITHS COMPANY

350 EAST WALNUT LANE
PHILADELPHIA 44, PA.

Serving the Gas Industries
For Over 40 Years.



PROPANE TRUCK TANKS FOR ALL DELIVERY NEEDS

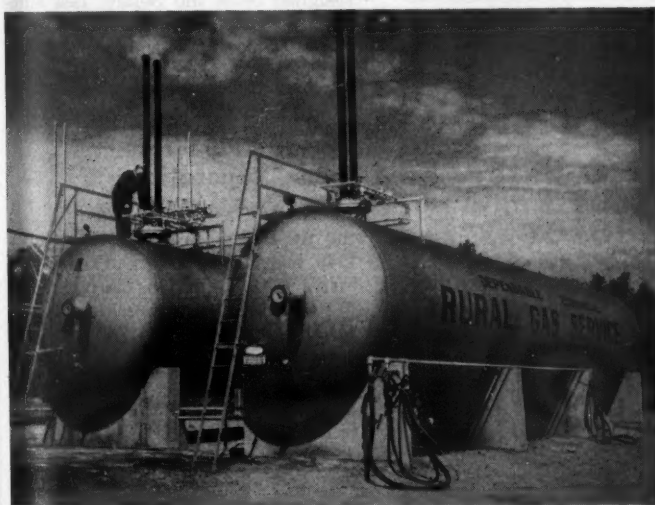
In streamline (illustrated) and walkway types, 1,181 gal. to 1,700 gal. water capacities. Constructed in accordance with A.S.M.E. Code, par. U-69, 200# w.p., or A.S.M.E. Code, 1950 edition, 250# w.p. Mounted on your chassis complete with valves, fittings, pump, hoses. Unit ready for immediate use when picked up. Write for details.



McNAMAR AND CROWLEY, Inc.
SALEM 5, ILLINOIS

Also 500 gal. and 1,000
gal. Domestic Tanks
(Salem System)

Storage Tanks
Up to 8,000 gals.



How Rural Gas Service gets all the gas they pay for

**Large New England gas company installs
modern Worthington transfer unit**

The Rural Gas Service in Westfield, Massachusetts, supplies LP gas to some 40,000 customers throughout New England. Because theirs is a volume business, Rural has to squeeze every drop out of the tank cars which deliver the gas to them.

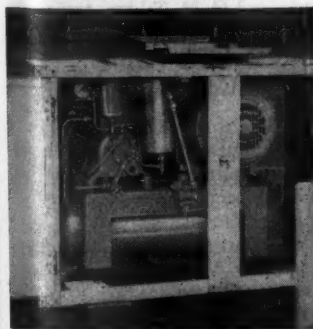
That's why they installed the new, compact Worthington LPG Transfer Unit to move the LP gas from the tank cars to their storage tanks. The Worthington unit gets all the gas, including the residual vapor.

Take a lesson from Rural and don't leave your profits in the tank car. Learn how quickly a Worthington LPG transfer unit will pay for itself in gas saved. Write for Bulletin H-609-B1A to Worthington Corporation, Harrison, New Jersey.

N.3.4

EVERY DROP OF GAS, including residual vapors, is removed from tank cars at Rural Gas Service.

WORTHINGTON LPG TRANSFER UNIT is a compact, self-contained assembly comprised of compressor, motor, starter, suction surge drum, oil filler pot, valves and pressure gauges.



natural gas firm, which merchandises butane and propane in Colorado and in part of Wyoming will be guided by Robinson as president, Mrs. W. J. Robinson and Henry Sayres as vice presidents, and Edgar Seeman as secretary. Sayres and Seeman are the owners of the remaining interest.

The sales of the company run around \$1,400,000 a year. The firm employs about 50 persons, has seven bulk stations and 60 pieces of trucking equipment.

"Oscar of Industry" Trophy Goes To General Gas Corp.

General Gas Corporation of Baton Rouge has won the liquefied petroleum gas field's "Oscar of Industry" trophy in "Financial World's" 13th annual survey of stockholder reports prepared by more than 5,000 American business firms.

Weston Smith, executive vice president of "Financial World" and director of the publication's annual reports survey, told General Gas officials:

"It is a pleasure to welcome your organization to the winner's circle on the occasion of your first entry into our competition.

"You are to be congratulated for the splendid example held out to other segments of American industry by the concise presentation of your corporate story to members of the General Gas shareholder family."

General Gas' prize-winning 1952 annual report was the first ever prepared by the Louisiana firm which was a privately-owned company prior to the public distribution of securities in April, 1952.

Rawlston D. Phillips, General Gas president, and Charles W. Guy, executive vice president, accepted the "oscar" award at a banquet in New York on Oct. 26.

Ransome Transportation Gets New Sales Manager

Edward L. Terry, prominent San Joaquin Valley businessman, has been appointed general sales manager of the Ransome Transportation Co. with headquarters at Fresno. He comes to Ransome from the Fortier Transportation Co., where he was a vice president.

Terry is also president of the Central Valley Unit of The Truck Owners' Association of California, a member of the Board of Governors of the State Association, a vice chairman of the Labor Negotiations Committee of the State Association and a Trustee of the California Mechanics-Machinist Security Fund.

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ASSURES
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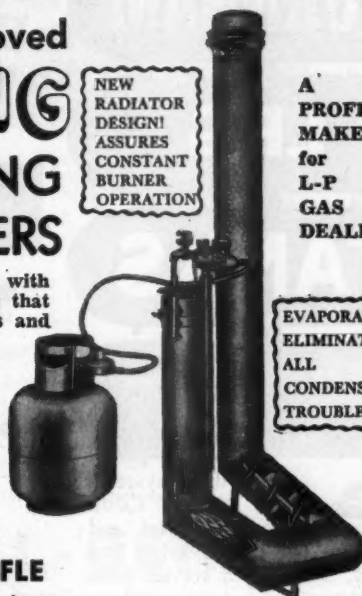
SIEBRING leads the way again with a new elevated radiator design that eliminates all dead air pockets and draft stoppages. These big, husky gas burning tank heaters are made with fully automatic, semi-automatic and manual controls. Let us tell you about our attractive prices and big dealer opportunities right now in an expanding market.

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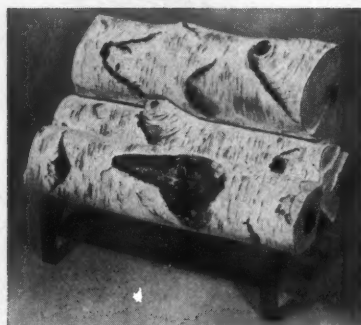
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gladness
And joy that never
ends!

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Answer to Problems On Page 86 of November Issue

Problem 1. The check valves on the customer's tank close, preventing escape of fuel from that source, but the valves between the hose nozzle and the truck tank are open. If the broken fitting forms a restriction, an excess flow valve at the tank outlet might not function. It is necessary to stop the escape of gas as quickly as possible. The valve that can be closed the quickest should be closed. Some gas will have escaped, under the best possible circumstances. Any people seen in the vicinity should be warned to get away. Traffic should be diverted if possible, and openings in buildings in the line of drift of the gas should be closed if there is possibility that there might be sources of ignition present. All gas will need to be removed from the customer's tank so a new filler may be installed.

Problem 2. This is probably the least safe way to handle gas, as the average owner knows little about the product, its hazards, or how to handle it safely. The greatest hazard is that he may connect a fresh cylinder and open the valve without first making sure that appliance valves have been closed.

Problem 3. This is the direct result of the practices mentioned in problem 2. Self-service is undoubtedly an important contributor to the frequency of trailer fires. The use of dual cylinder installations instead of single cylinders on trailers would no doubt reduce the frequency of fires, although it is still possible to run out of gas if a refilled cylinder is not installed soon enough. Installation of a positive closing valve that operates on drop of pressure (Rego 2938) ahead of each appliance would prevent escape of gas through open appliance valves, and would go far toward eliminating fires caused by leaving valves open while changing cylinders. Red tags on all refilled cylinders, cautioning users to close appliance valves before turning on the cylinder valve, and against sources of ignition while disconnecting empty cylinders, might help. You may have additional suggestions, based on your own experience and your knowledge on practices and conditions in your locality.

Problem 4. Experience shows that the amount of gas vented during the release operation of the pressure relief valve, if directed upward through a seven foot stack of the correct size for the valve, will be dispersed below the range of flammability, under all

ordinary circumstances, before it reaches the ground.

Problem 5. The pressure is higher in the hose than in the bulk truck tank, as the result of the operation of the pump. Leakage back through the pump allows equalization of pressures, so there is not so much chance that hydrostatic pressure will develop in the hose. The pressure relief valve protecting the hose may operate anyway, if the hose warms up sufficiently after use, but with the pressure reduced, the amount of gas escaping will be less.

Problem 6. This presents a touchy problem, to which the only really satisfactory answer is, "Never overfill a tank." You probably recall that in the good bottle filling plants, they have evacuating manifolds or lines to permit reducing the filled weight to the proper amount, and that these are always used to prevent the troubles which might follow if the overfilled cylinder should remain in that condition.

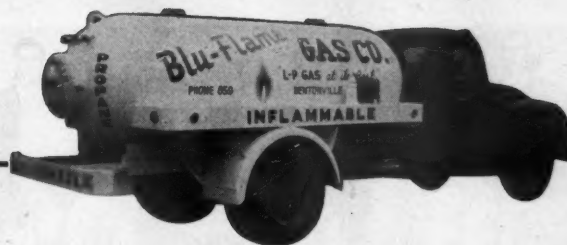
An overfilled bulk storage tank may be bled down safely through a vertical pipe conducting the escaped gas to a safe height. The connection should be made to the service valve, without leaks at the lower end of the pipe, and bleeding should be slow enough to insure complete dispersal of gas before it can reach a point of ignition. It's an awful nuisance, and should never be required.

Problem 7. That's easy. Disconnect the hose from the customer's tank, and stow it away on the truck in the place and manner that it should be carried. Take out the wheel chocks and place them in the carriers. Walk clear around the truck, making sure that the hose is disconnected and stowed away, all cabinet doors closed, chocks in the carriers, and everything ready to travel. While you are at it, look in front of the truck to see that there are no customer's children, toys, pets, etc., in the way. Get in the cab and start to drive.

National Magazine Features LPG Kitchen

"A Kitchen That Grew" is the title of a long illustrated article in the October issue of "Country Gentleman" about a Mount Vernon, Iowa, farm family which recently modernized its kitchen and equipped it with L. P. gas appliances.

The story was developed by members of the magazine staff in cooperation with the LP-Gas Information Service and Rapid-Thermogas Co., Des Moines, Iowa. Reprints are being mailed to 12,000 industry companies.



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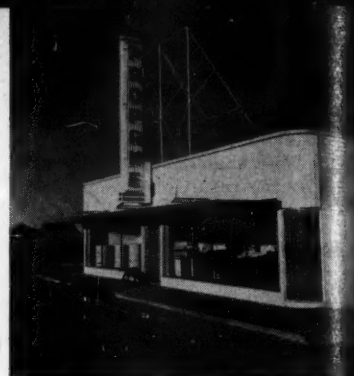


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Associates and dealers of United L. P. Gas Co. who are making a tour of LPG production centers, left to right (front row): Glenn G. Diechman, W. H. Goble, Paul E. Bundy, Eric Dankert, Kenneth C. Rains; left to right (back row): Fred J. Ehlers, Bob Dornacker, Doyle I. Illian, Dewel Illian, Arthur McMullen, and George Rains.



Modern building houses the home office of the United L. P. Gas Co. at Grand Island, Neb.

Nebraska LPG Firm On Tour Gets Better Acquainted with Industry

By Craig Espy

BUILDING summer load and securing adequate financing are the two most important problems faced by the L. P. gas distributor. This is the opinion of Kenneth C. Rains, of the United L. P. Gas Co., Grand Island, Neb., who with 14 of his associates and dealers has been making a tour of the centers of production of L. P. gas and equipment.

Mr. Rains, with his party, spent several days in the Tulsa area getting better acquainted with suppliers and the problems of the industry. The party was conducted on a tour of the Ringwood Natural Gasoline plant of Warren Petroleum Corp. They also visited the plant and offices of Anco Manufacturing & Supply Co., who in turn took them through the Sand Springs plant of Graver Tank & Manufacturing Co. Inc. The party

also visited with officers of McNamar Boiler & Tank Co.

Those making the swing to Tulsa were Paul Bundy, Fremont, Neb.; Eric Dankert, Chambers; Arthur McMullen, Dunning; Dewey and Doyle Illian, Spalding; Glenn Diechman, Aurora; Howard Goble, Sargent; Bob Dornacker, Bennington; Fred Ehlers, Ft. Calhoun; Geo. Rains; Kenneth C. Rains and Ted Sundmier. Ken Waldron, president of Farmers State Bank at Aurora and Harry Grimminger, attorney for the company also were with the party.

United L. P. Gas sells its gases under the trade name of Unipane, "the all-weather propane." The company was organized in 1946 as an LPG wholesaler and retailer, at which time the company transported its gas from the field. Later the com-

pany sold its retail and equipment business continuing only to wholesale fuel. The company leases its plants to individual operators on a long time basis. A financing plan has also been set up for the dealers so that needs of customers, from one cylinder to equipment for the largest installation, can be financed over a 36 month period.

United L. P. Gas Co. now operates 21 bulk plants including a new plant going in at Burwell, Neb. The company plans to install 10 more plants in the early future. Proposed plant sites include Kansas City, Mo.; Kearney, Central City, Clarks, Omaha, Ord and Columbus in Neb. Within the current year the company purchased the Leidy Propane Gas Co. at Oneil and two plants of the Gas & Electric Service Co. at Norfolk and Kinson, Neb.

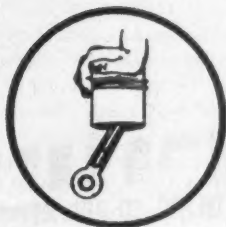
The company has installed 250 one thousand gallon bottle filling plants, in addition to the larger bulk plants. These smaller tanks are kept supplied with L. P. gas from the larger plants. The smaller tanks are operated by local business men. The small plants are set up to maintain 24-hour service to highway and local customers.

Once a year United L. P. Gas promotes a tractor conversion demonstration at each of its plants. Farmers are invited to attend the demonstration. Each plant operated by the company will average 400 customers.

Summer and all year load is built by dehydration installations, tractors, gravel pits and similar installations. The Omaha Cold Storage Co. uses the product at their plants in Nebraska. The Vautravers Poultry Co. of Grand Island also uses propane in producing 450,000 broilers for the market every eight weeks.

Norfolk, Neb., dealer for United L. P. Gas Co. is shown with line-up of delivery equipment and bulk tank truck.





Butane-Propane

POWER SECTION

INSTALLATION • CARBURETION • SERVICING



Cities all over the country are finding that the propane powered bus is ideal for downtown service, because of the absence of objectionable exhaust fumes.



The first propane bus operated by Chicago Transit Authority stands beside two 15,000 gal. tanks being installed at North Park bus yard.

Indicative of the growing interest among fleet operators in the use of propane as power fuel, the national Fuels and Lubricants meeting of the Society of Automotive Engineers, held at Chicago November 4-6, heard three papers on this subject. The following article is a condensation of the paper presented on that occasion by J. N. Jobaris of the Chicago Transit Authority. This organization has been operating buses on propane in metropolitan Chicago for nearly three years. (See "Butane-Propane News", August, 1950). Their fleet will soon number more than 950 propane powered buses. Mr. Jobaris pulled no punches in his report, outlining the troubles and the advantages with equal frankness.

Reports of the other LPG papers presented at this meeting will be included in future issues.—Ed.

THREE YEARS LATER:

Chicago Transit Authority Reports On Propane Progress

By J. N. Jobaris
Chicago Transit Authority
Chicago, Ill.

IN the early part of 1950, in order to proceed with its modernization program, the Chicago Transit Authority was faced with the problem of selecting and purchasing a large number of motor vehicles.

Records at that time indicated that diesel fueled buses were more economical to operate than gasoline fueled buses. The savings in fuel cost per mile was found to be enough so that the first draft of our new specifications accepted only buses with diesel fuel engines.

At about the same time buses were offered to the passenger transit industry with propane fueled engines. The following claims were made about propane: (1) It had an octane rating close to 125 which permitted higher compression ratios and made increased power available with the same sized engine. (2) The exhaust smoke and obnoxious exhaust odors were completely eliminated. (3) There was no washing away of the

cylinder wall lubricants with consequent longer engine life. (4) There was less crankcase dilution and the periods between oil change were extended. (5) There was no crankcase sludging. (6) Propane cost per gallon in the Chicago area was considerably lower than that of gasoline or diesel fuel.

With the war potentiality facing us at that time, and with more railroads and truckers changing to diesel fueled engines, and with the increased military activity, indications were that industry and government would be reaching toward the center of the crude oil barrel. Since the Armed Forces had hoped that diesel type fuel could be used to propel jet jobs, it appeared that diesel fuel oil might be classed as a critical material for military needs if a full scale war broke out.

Being a surplus product and a non-strategic material, propane seemed to be an answer. The fact that propane would be readily available at a lower than diesel fuel cost per mile was a further incentive for checking

into LPG as a motor fuel. Checks were made into such items as fire hazards, storage, dispensing, performance, effect on engines when used in outdoor idling, and operation records of people who had used or were using propane. A fleet of 100 LPG fueled transit buses had been operated in Spokane, Washington quite successfully for approximately 10 years, accumulating some 38,000,000 miles. The reports received from Spokane were that the engine power was increased, exhaust smoke and obnoxious odors were eliminated and that engine life was increased. Several trucking companies reported equally good results. Checking into the insurance costs, it was found that there was no increase in premium rates if the installation of the propane equipment and the fuel handling practices complied with the requirements and safety codes as set up by the National Board of Fire Underwriters, Interstate Commerce Commission and the State and City agencies.

In order to get first hand experience in CTA type of operation, a pro-

claims appeared to be substantiated. It appeared that we should give serious consideration to the use of LPG instead of diesel fuel.

In addition, Chicago Transit Authority's ordinance with the City of Chicago specifically obligates Chicago Transit Authority to take definite, positive steps to reduce or eliminate noxious gases resulting from the operation of its buses. This provision was written into the ordinance because of complaints over the years regarding the disagreeable fumes emitted by buses. The businessmen, the people who lived on street car lines converted to bus operation, and most important, the passengers, particularly objected to buses which emitted smoke and fumes.

As a result of these studies the bus specifications were changed and when the invitations to bid for new buses were sent out the specifications accepted either diesel or propane fueled vehicles. It was found that the propane fueled buses could be purchased for approximately \$3,000 less per bus than the diesel fueled buses. This savings permitted the purchase

fuel, and 15.24 cents per gallon for gasoline with similar taxes for the three fuels. It was also possible to obtain a 5 year propane fuel contract with the assurance of essentially the same price spread between propane and diesel fuel during the life of the contract.

The lower initial cost of the propane buses with the attractive fuel contract offered, presented a substantial savings which was vital to the CTA modernization and expansion program. Contracts were awarded to two suppliers for a total of 551 propane buses.



John Joberis, equipment engineer, (left) and Stanley D. Forsyth, chief engineer, size up the public relations features of the propane buses.



Ralph Budd, chairman, Chicago Transit Board, and W. J. McCarter, general manager, inspect the engine of a new propane bus.

pane fueled bus was placed in revenue service on February 7, 1950. After running the bus for 5 months, the records were checked, the mechanical condition of the engine was examined, and it was found that the

of more units than was originally anticipated.

Fuel cost for the Chicago area at that time was found to be 8.3 cents per gallon for propane, as compared with 13.9 cents per gallon for diesel

Installation plans were immediately started for the yard storage tanks. The tanks are all above ground. The North Park garage installation, which is the largest, has four 18,000 gallon water-capacity tanks. North Avenue and 77th Street garages each have two 18,000 gallon water-capacity tanks. Each station is equipped with two 5 stage multivane turbines which are used to unload the supply trucks and to pump the fuel through standard appearing fuel dispensers at the fueling island into the bus fuel tanks. By using two pumps at each location it is possible to unload fuel delivery trucks and fuel the buses at the same time. A further advantage of a two pump installation is that one of the pumps automatically becomes a standby in event of a pump failure. An 18,000 gallon tank is being installed at the 69th Street garage.

The bus fuel tanks are the Park-hill-Wade type with an internal expansion tank and have a fuel capacity of 105 gallons. Allowance is made for

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Reo LP-Gas powered trucks are now approved and listed by Underwriters' Laboratories.

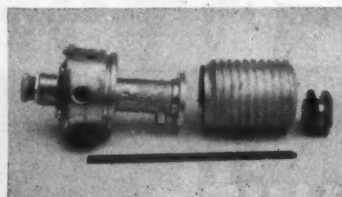


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REO MOTORS, INC., LANSING 20, MICHIGAN

DECEMBER, 1953

WELL, WHAT IS THIS?



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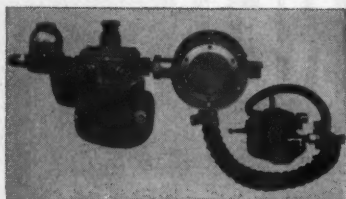
New J&S
Ford V8
Conversion
Unit



It mounts right on the cylinder head in place of the thermostat housing.

- No mounting bracket
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OTHERS will look like THIS:



J&S 1953 Ford Tractor Kit

AND THIS:

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We have several other new kits you can get from our distributors, or direct from

J & S Carburetor Co.

Box 10391, DALLAS 7, TEXAS

fuel expansion by installing a small outage tank inside the larger bus fuel tank. Fuel is pumped into the tank to refusal. On filling, the expansion tank is sealed off from the main tank by a valve which is opened after the filler nozzle is removed. The filler connections are fully automatic and present less difficulty than fueling with gasoline or diesel oil. The pumping rate is approximately 30 gallons per minute.

The buses arrived in December of 1950 and the first troubles experienced were frozen fuel lines and ice in the filters and regulators which occurred prior to the buses being placed in service. Due to condensation while in storage, water accumulated in the bus fuel tanks and the tanks were filled with propane before

of the four storage tanks and it was simple to isolate it. The CTA propane fuel specification states that the total sulphur content shall not exceed 15 grains per 100 cubic feet of gas. Since this episode, and it has been the only one, the fuel delivered contained less than 10 grains of sulphur per 100 cubic feet of gas.

The vaporizer-regulators have been a source of service difficulty almost from the very start. Short regulator valve life troubles were overcome by using improved materials and design in the seats, and by the addition of a step-down regulator set at 50 psi ahead of the vaporizer-regulator unit. Propane leaks which developed in the regulator units of the carburetion system were overcome by silver



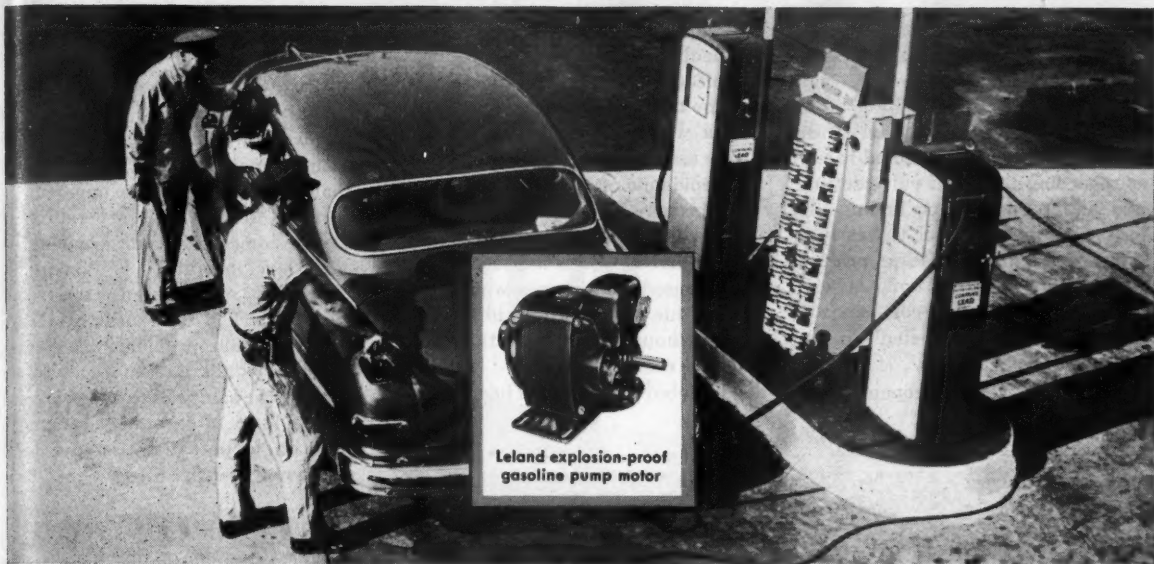
The propane buses are used on downtown routes and routes running into the downtown area. Riders prefer them because of the absence of irritating exhaust fumes.

being properly drained. This was readily solved by injecting anhydrous alcohol into the bus tanks. The use of anhydrous alcohol completely eliminated the freeze up condition. It was only necessary to use anhydrous alcohol in the tank on the original fuel charge. Thereafter, the tanks remained water free.

Several months later, due to some difficulty at the refining plant, a shipment of fuel with a high sulphur content was received. The sulphur in the fuel reacted with the copper fuel line forming copper-sulphide flakes which clogged up the filters and regulators, slowing up the fuel flow to a point where some of the engines became inoperative. All the bus fuel tanks had to be evacuated and the filters and vaporizer-regulators had to be cleaned. Fortunately, the contaminated fuel was placed in only one

soldering and brazing at critical points. Hard starting problems which developed during the second winter of operation were overcome by modifications of the starting mechanism, or by the use of an electric primer in lieu of the conventional choke arrangement.

The safety relief valves on the 551 buses are set to open at 250 psi since a U-69 200 pound working pressure tank is used. Some of the relief valves were set just slightly under 250 pounds and under elevated temperatures relieved during fueling because the additional pressure of the 75 pounds fueling pump differential setting raised the tank pressure to the relief valve setting. The solution to the above problem is to use a butane-propane mixture during the summer season. This lowers the vapor pressure to provide proper operation. The



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The name LELAND is synonymous with dependable, safe electric motor performance—particularly in the distribution and sale of volatile petroleum products.

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ing pump manufacturers, Leland has worked with many other manufacturers. The emphasis is still on quality design and superior fabrication of motors—open, totally enclosed, or explosion-proof—standard or special.

A recent Leland development is a low voltage DC explosion-proof motor for power hose reels on trucks handling inflammables and volatiles. These are now widely used on airport fueling and crash trucks, gasoline and fuel oil delivery trucks, etc. Other examples of Leland's creative electrical engineering are contained in Bulletin P102-A. May we send you a copy?

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tanks on the newer vehicles are the U-69 250 pound working pressure type which, according to code regulations, permits the use of a 312 pound relief valve setting. These tanks will provide additional safety, as regarding the relief valve setting, and will permit faster fueling and less possibility of relief valves leaking. The slight increase in price of the higher pressure tank is well worth the additional cost since it helps maintain the "sealed" fueling system.

When CTA went to propane it was

anticipated that there would be some difficulties encountered with the use of a fuel which was not too common to the bus industry. The above problems were the type that could be fully associated with the use of LPG. An epidemic of cylinder head cracking occurred and the first thought was that it was due to propane. Later investigations indicated that it was caused by improper water circulation due to restrictions in the thermostat housing and cavitation of the engine coolant pump.

The above troubles off hand appear

small, but when you use a multiplying factor of 551 to obtain your product you can readily see that the maintenance department has had its hands full. The engineering and maintenance staff at CTA are proud that they were given the opportunity to help, along with several other transit companies, in the pioneering and development of equipment to utilize propane as a transit bus motor fuel. It is felt that most of CTA's major propane problems are solved, and we would like to recapitulate some of the solutions to our problems in the form of recommendations to pass on to potential users of LPG for motor fuel.

Solutions to LPG Problems

1. New tanks should have anhydrous alcohol put into the tank with the original fuel charge.

2. Propane specifications should be written around NGAA signified petroleum gas specifications. The bomb corrosion test in this specification, if enforced, will keep the harmful sulphur at a completely safe minimum. The odorizing agent to be added should be completely stable.

3. Use stainless steel fuel lines to provide a safety margin as regarding fuel sulphur content in order to eliminate corrosion if a delivery of higher-than-normal sulphur content fuel is received.

4. Use a solenoid or a vacuum type fuel line shut-off valve to provide automatic fuel shut-off with the ignition lock. Shut-off device should be of the "fail-safe" type.

5. To provide long life the regulators should have sturdy valves. There should be no soft soldered joints on the fittings or connections in the regulator-vaporizer unit.

6. Fuel tank should be U-69 250 pound working pressure type with a relief valve setting of 312 pounds. The propane fittings and valves in the tank and fueling system, such as shut-off valves, filler valves, relief valves and gauges should be of high quality UL approved type for LPG use.

7. Use an engine designed for high compression operation. It is well to check with the manufacturer for his specifications for best engine operation. Intake manifold should be of the cold type design to obtain good volumetric efficiency.

After less than three years of op-

CENTURY

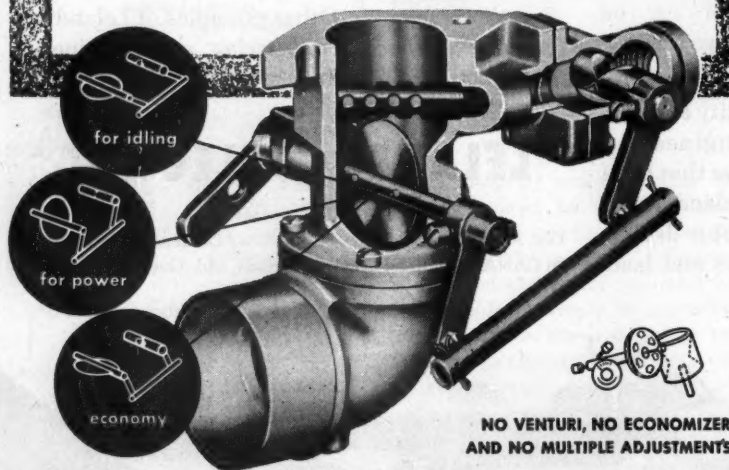
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INTERNATIONAL Model RP-205 ROADLINER®. GCW rating 55,000 lbs. 142 or 157-inch wheelbases. Famous Comfo-Vision cab with Sweepstare windshield. Green-tinted, non-glare safety glass optional.

International Harvester has led the transportation industry in the development of safe, factory-installed LPG truck power. The INTERNATIONAL line now offers the widest range of LPG models in the industry, from the medium-duty RP-160 to models with 90,000 lbs. GVW rating.

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Ask your INTERNATIONAL Dealer or Branch for a demonstration of an INTERNATIONAL LPG-powered truck for your operation. Time payments arranged. An INTERNATIONAL truck with factory-installed LPG equipment will give you new levels of performance because it is engineered by the leader in LPG power development.

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eration it is too early to have compiled reliable comparative engine maintenance costs because accumulated mileages on the higher mileage units have not reached the point where the average type bus engines require overhaul. However, some data on average cylinder wall wear and bearing conditions is available on an engine which has been torn down several times for wear inspection.

Reading at 50,000 Mile Engine Inspection

Cylinder sleeves, .0015 — average wear.

Pistons, .001—average wear.

Crankshaft rod journals—no wear.

Connecting rod bearings, .0015 — average wear.

Bearing clearance, .003.

After talking about the various troubles encountered with propane

let us now go to the other side of the list and mention the advantages that CTA has found in operating with LPG. CTA has found that propane as an engine fuel offers:

1. Excellent public acceptance. When clubs, picnic or PTA groups charter buses they invariably ask for "one of the new propane buses."

2. Excellent driver appeal. Operators say "the propane buses have good acceleration and the buses do not have any fuel odors."

3. No exhaust smoke or obnoxious odors. As mentioned previously, this is an important item because of CTA's ordinance with the City of Chicago which obligates CTA to take steps to reduce or eliminate exhaust gases and smoke resulting from the operation of its buses.

4. Less frequent oil changes. Twice the mileage between oil changes. Consideration is being given to increase this mileage by 50 percent.

5. No crankcase dilution or sludging even with protracted idling. For the past two winters over 400 of the buses were stored outside. For several months each winter the engines were run for 24 hours a day.

6. Increased spark plug life. CTA obtains 24,000 miles of plug life with the propane fueled engines as compared with 6,000 mile plug life on gasoline fueled engines.

7. Knocks or ping completely eliminated due to higher octane rating of fuel.

8. Decreased carbon formation on engine parts or in the mufflers.

9. Last, and probably the most important of all, lower fuel cost per mile than diesel fueled buses. The last comparative check between buses of the same size indicated that the fuel cost per 1,000 miles on propane fueled buses was \$37.84 as compared with \$41.48 per 1,000 miles on diesel fueled buses.

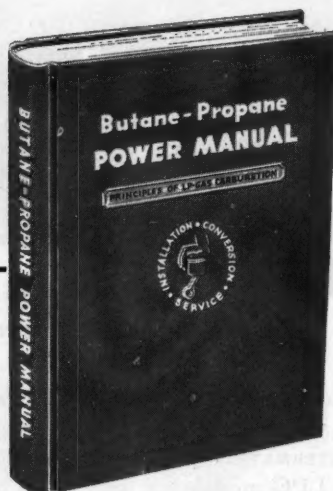
CTA's opinion of the use of LPG as a motor fuel is strongly evidenced by the fact that after 2½ years and 50 million miles of operation with propane fueled buses we have within the past year ordered 400 more propane fueled buses. The delivery of this second group of buses started in August of this year. The Authority feels that the exhaust smoke and odor free propane fueled bus with its fast acceleration and quiet operating engine is the ideal vehicle for Chicago's urban transit motor bus operation.

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Here is the first authoritative guide ever published for the rapidly expanding LPG power market. Basic facts of engines, fuel, and power are given in easy-to-understand language; then careful directions and clear illustrations take you step-by-step through installations, conversions, servicing . . . everything needed in a practical working manual for practical men. Nearly 5,000 copies of the BUTANE-PROPANE POWER MANUAL have already been sold.

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OUTLINE OF CONTENTS

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| 1. The Nature of L. P. Gas | 13. Ignition Problems |
| 2. Basic Engine Facts | 14. Tractor Conversions |
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| 8. Natural Gas Carburetion | 20. Lubrication of L. P. Gas Engines |
| 9. Planning the L. P. Gas Installation | 21. Trouble Shooting |
| 10. Checking the Engine's Condition | 22. Safe Storage and Handling of L. P. Gas |
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| 12. Cooling the Intake Manifold | Appendix (including Definitions) |

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BUTANE-PROPANE News, 198 S. Alvarado St., Los Ang. 57, Cal.

Growing Use of LPG Buses Revealed By Recent Survey

Reporting substantial savings in maintenance and oil costs and many other advantages, transport companies operating buses on liquefied petroleum gas said they expect to add 550 units powered by the new motor fuel in 1953, results of a survey by the Liquefied Petroleum Gas Association revealed.

The poll was conducted by the LPGA market research committee, headed by A. F. Smith, A. O. Smith Corp., Milwaukee, Wis. Twenty-nine privately and municipally owned bus lines replied partially or completely to the survey questionnaire. The 550 L. P. gas units they are adding to their fleets this year represent a 38% increase over the 1,434 in service at the end of 1952.

Comparisons With Other Fuels

Inasmuch as elimination of exhaust odors, prevention of sludge and crankcase dilution, fewer overhauls, increased power and less driver fatigue are established advantages of L. P. gas contributing to its growing popularity as a bus fuel, these factors were not taken into consideration in the survey. Instead respondents were asked to supply comparative statistics on gas and oil consumption and maintenance costs with L. P. gas and other fuels, and to tell whether they are satisfied or dissatisfied with results under LPG operation.

The 1,434 buses covered in the study traveled a total of 55,785,205 miles in 1952. Nearly three-fifths of the units were factory-built for LPG use. The remainder were converted to new fuel.

Respondents reported that their LPG buses used an average of one gallon of oil per 1,000 miles in 1952. This figure includes both the amount consumed for oil changes and for make-up.

The average oil change was made after 11,947 miles. Nineteen of the fleet operators said the interval between changes was longer with L. P. gas, five said it was about the same and none found it shorter. It was asserted that the 11,947 figure would probably have been higher but for the tendency of some companies to adhere to the oil change practice followed under gasoline operation.

The number of miles traveled per gallon of make-up oil required ranged from a high of 3,000 to a low of 408. The average was 1,049 miles. Eight operators said their make-up ratio was better than with gasoline and eight found it about the same.

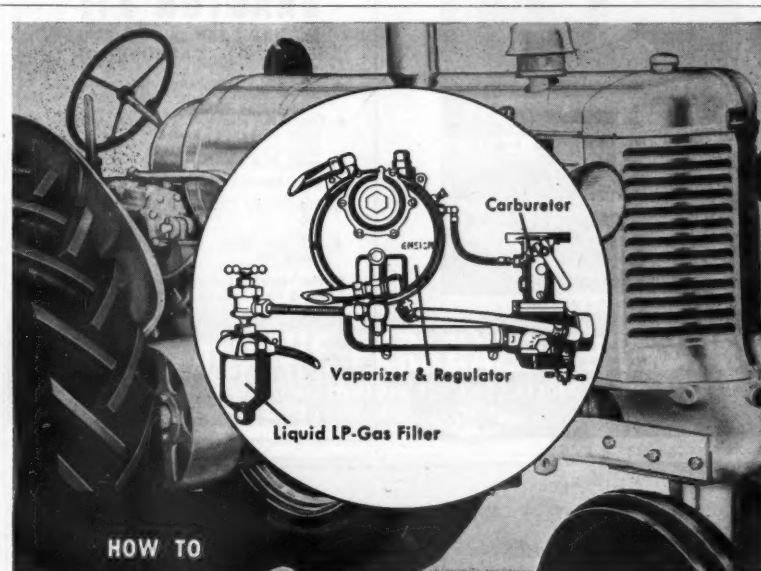
None reported poorer results.

On an average, the price of L. P. gas was 5.03 cents less per gallon than for gasoline. The fleets averaged 3.8 miles to the gallon of LPG burned. Thirteen respondents to the questionnaire reported they had obtained better mileage with gasoline, five said it was a standoff between the fuels and one asserted that L. P. gas was better even in this category.

The LPGA committee interpreted these comparative figures as favorable to L. P. gas. It was pointed out

that the lower price of the fuel more than offsets the difference in mileage per gallon in most areas.

Twelve operators asserted maintenance costs were down with LPG, five said they were about the same as with gasoline or diesel fuel and only one found them higher. Nearly three-fourths indicated that they were "very pleased" or "satisfied" with their L. P. gas buses. Three said they were not sure and two expressed dissatisfaction. It is believed that these five operators may not have



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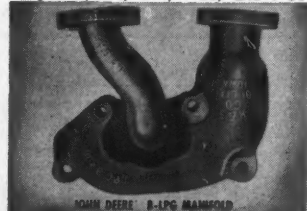
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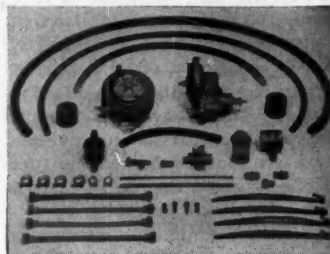


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had sufficient experience with L. P. gas to give an opinion, or have converted equipment not completely suitable to the fuel.

More than three-fourths of the fleets own their own LPG storage tanks. The remainder use distributors' facilities.

The Chicago Transit Authority, biggest user of LPG buses, now has 573 propane-powered units in service. It has an additional 378 on order, scheduled for delivery in 1953 and nearly 1954.

Texas Railroad Commission Adopts LPG Amendment

The Railroad Commission of Texas has adopted an amendment to the Liquefied Petroleum Gas Docket No. 1, which sets up rules and regulations governing the installation of storage and dispensing facilities for L. P. gas at service stations.

The new regulations, contained in Division IX, are based on Pamphlet 58, with additional requirements which the Commission has deemed necessary and proper for the safety and protection of the public. Several of the safety provisions which are outside the scope of Pamphlet 58 follow suggestions made in the article "Planning the Service Station Bulk Plant," in the June, 1953, issue of BUTANE-PROPANE News.

In addition to the engineering and construction features specified for safety of installation, the amendment also emphasizes the need for trained personnel in the maintenance and operation of the storage and dispensing facilities.

ATA Group Studies LPG

The annual convention of the American Taxicab Association, which was held at the Shoreham Hotel, Washington, D. C., October 26-28, devoted a major session to a panel discussion of the use of propane as taxicab fuel. With Carl Abell, Editor of Butane-Propane News, serving as moderator, problems arising in connection with fuel supply, storage, and service were discussed by Don Welch of Warren Petroleum Co. and Bab Mathews of Phillips Petroleum Co. Results of tests conducted for the association were presented by L. L. Welch, taxi operator of Morristown, N. J., and operating experience covering a two year period was given by John Rouse, of the



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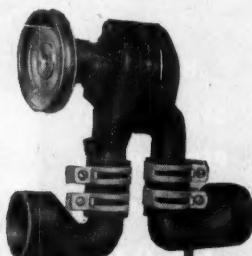
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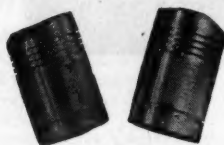
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Wilmington Cab Co., Wilmington, Cal. Additional figures from the Boynton Taxicab Co., operator of 235 converted vehicles in Milwaukee, were also presented. All reports seemed to agree that a differential of 5 cents or more per gallon for fuel justified conversion providing that satisfactory arrangements could be set up for fueling the vehicles.

The trade show which was held with the convention included a joint exhibit sponsored by Warren Petroleum Co., Dix Manufacturing Co., Bastian-Blessing Co., and Pressed Steel Tank Co., and a separate carburetion exhibit by Universal Products Co. These exhibits received more attention from the taxicab operators than anything else in the show. A converted Ford, provided by Universal Petroleum Co., Tulsa, and Century Sales Co., Memphis, was on hand to demonstrate the characteristics of L. P. gas in actual operation.

LPG Power Use Shows Steady Climb

Farm tractors operating on L. P. gas showed an increase of 22% in 1952, survey figures released recently by the Liquefied Petroleum Gas Association reveal. The total number powered by LPG at the year's end is estimated at 130,000.

The LPG study also showed that the number of L. P. gas trucks, buses and stationary engines increased more than 30%. Upwards of 50,000 such units were using butane, propane or mixtures of the two gases at the end of 1952.

The survey was conducted by the association's market research committee, headed by A. F. Smith of A. O. Smith Corp., Milwaukee, Wis. Findings were based on reports from 95% of the manufacturers of LPG conversion kits and factory-equipped LPG tractors.

Fall Sales Meet For Anco

Anco Manufacturing & Supply Co. of Tulsa held its annual fall sales conference at the East St. Louis branch offices of the company in November. Salesmen and officials of the company from Tulsa, East St. Louis, Omaha and Minneapolis attended. The following subjects were discussed: plans for promoting sales of Anco's 949 lb. ICC Pig cylinders; the development of sales of bulk plants and equipment, and sales of motor fuel equipment. The conference was presided over by W. M. Wattman, vice president of the company.

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Vaporizer and
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OUR PREFERENCE IS TO WORK WITH experienced L. P. G. men. Write us. Oil Industry Employment Service, 405 Tuloma Bldg., Tulsa, Okla.

NEED THREE GOOD, HONEST, HARD-working district salesmen for heaters and ranges to cover following areas: Georgia; Kansas; Southern Illinois. Job offers permanent employment. Send references for character and experience, Box 356, Malvern, Arkansas.

EXPERIENCED SALES REPRESENTATIVES covering Ohio, Michigan, Indiana, Kentucky to represent western firm manufacturing cylinder valves, regulators and accessories for compressed gases. Can be carried with non-conflicting lines. Prefer full time with contacts in LPG field. Established accounts—protected territory. State experience in letter to Box 490, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

WE NEED A GOOD BUTANE MAN WHO has his own 300 to 500 gallon truck to take over our butane distribution. Pavynin Butane, P. O. Box 65, Palm Springs, Calif.

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DISTRIBUTOR TO TAKE OVER GOING propane business in Oregon. Investment required for trucks, inventory, etc. \$15,000.00. Yearly sales: 400,000 gallons. Necessary facilities for complete operation provided. Write Box 440, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

WANTED: PARTNER TO MANAGE L. P. gas plant in Minnesota or will sell on easy terms, as owner expects call to Army Engineers. Write Box 480, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

FOR SALE: LPG AND APPLIANCE BUSINESS, bottle and bulk, in central Missouri Ozarks. 18,000 gallon storage, 1000 gal. Chev. tank truck, 26 x 60 brick and tile building with large display room on main street and state highway. Will gross over \$30,000 per year and plenty of potential for expansion. Age and poor health reason for selling. Immediate possession: \$42,000. Write Box 495, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

GOOD, HEALTHY, GROWING L. P. GAS business in the northwest. Approximately 34 million gallons per year. Good profit on gas, gross sales approximately \$200,000.00 per year. Only propane dealer in area. Must be able to pay \$60,000.00 down. Write Box 505, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

FOR SALE: FLORIDA L. P. GAS BUSINESS, wholesale and retail. 48,000 gallon bulk storage; 2 delivery trucks; 2 bulk trucks; present consumption in excess of 600,000 gallons per year; approximately 1000 customers. Will require \$100,000.00 to handle. Partial credit can be handled with parties having the proper financial ability. Write Box 510, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

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MANUFACTURER'S REPRESENTATIVE, now calling on the LPG trade and plumbing distributors in New Mexico, Colorado, Wyoming, Montana, Idaho and Utah, desires companion lines. Territory being completely covered on 90 day schedule. Write Box 500, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, California.

FOR SALE — TRUCKS AND TRAILERS

NEW: IMMEDIATE DELIVERY. 1400 WG U69 propane lightweight twin barrel delivery unit. Mounted on new 1953 2-ton, 2-speed Chevrolet truck. Fill and vapor hose assemblies—Viking Mechanical Seal Pump—power take-off assembly. **READY TO GO FOR \$3845.00** tax paid. Also available at low extra cost: meters—fire extinguisher—motor fuel tank and L. P. carburetion. American Tank & Manufacturing Co., 2136 West Commerce Street, Dallas, Texas. P. O. Box 5525. Telephone Riverside 9183.

NEED A WORKHORSE? WE HAVE NEW 1953 Model 353 GMCs; 2 ton, 2 speed, w/8:25 tires equipped with a 1400 WG Nor-Tex Standard Twin Propane unit. It's skirted, plumb and perfectly balanced! Complete with recessed fuel tank, Viking KK190 pump with mechanical seal, 50' filler hose, ICC lights and power take-off with spline jack shaft. Finish is aluminum paint over red oxide. Tax paid and ready to go. \$4043.80 FOB North Texas Tank Co., Box 519, Phone Central 5416, Denton, Texas.

FOR SALE — TRUCKS - (Cont'd)

A PACKAGE UNIT SPECIAL! A NEW 1953 2 ton, 2 speed Chevrolet equipped with a 1250 WG Nor-Tex Standard Twin Propane Unit. It's skirted, plumbed and perfectly balanced! Complete with recessed fuel tank, Viking KK190 pump with mechanical seal, 50' filler hose, ICC lights and power take-off with spline jack shaft. Finish is aluminum paint over red oxide. Tax paid and ready to go \$3919.85 FOB North Texas Tank Co., Box 519, Phone Central 5416, Denton, Texas.

SPECIAL: AMERICAN "BETTER-BILT" lightweight 1400 water gallon U69 propane twin barrel delivery unit, with Viking Mechanical Seal Pump—Neptune Print-O-Meter—fill and vapor hose assembly—mounted on new 1953 2-ton, 2-speed GMC; 125 hp engine with 8.25 tires—**READY FOR SERVICE. PRICED AT \$4475.00** tax paid FOB Dallas. Other sizes available at comparable low cost. American Tank & Manufacturing Co., 2136 W. Commerce Street, Dallas, Texas. P. O. Box 5525. Telephone Riverside 9183.

PERFECTION PLUS! A NEW 1400 WG twin Trinity model #103 propane unit with double door rear compartment, housing Neptune #433 Print-O-Meter and remote control Okadee valves; excise tax paid, KK190 Viking pump, PTO&DS, plumbing, ICC and directional lights, fuel tank, filler hose, white enamel, mounted on 1953 2-ton 2-speed F-600 Ford or #6400 Chevrolet chassis. \$4550.00 FOB Trinity Steel Co., Inc., 3301 S. Lamar, Hunter 8321, Dallas, Texas.

PROPANE DELIVERY TRUCK FOR sale. 1949 International K6 w/6 825 x 20 tires. Power take-off. Viking 50 gallon pump, 1200 gallon tank, Pittsburgh meter, hose, Algas carburetion, fire extinguisher, heater, complete. Reason for selling: purchased competitive business and don't need all the trucks. A bargain if interested. **WISSING'S METERED GAS, INC.,** 500 W. North Street, Salina, Kansas. Phone: 2254.

USED PROPANE DELIVERY TRUCK for sale. 1952 Int. L-160 with 1400 gal. twin propane tank, piped complete. This unit has 15,000 miles and has been used only 11 months. Price complete with pump, heater, propane carburetion, hose: \$3,695.00. This is \$1,000.00 under new price. White River Distributors, Inc., Batesville, Ark.

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A DELUXE TRINITY TWIN UNIT MODEL 103, complete with KK-190 Viking pump, remote control Okadee valves, Neptune Print-O-Meter, 54 gal. fuel tank in rear compartment, 50 ft. filler hose, white enamel and tax paid. Mounted on new 1953 RP-160 factory LPG equipped International chassis, ready to go at \$4,988.00. F.O.B. Trinity Steel Company, Inc., 3301 S. Lamar St., Dallas, Texas. Phone Hunter 8321.

FOR SALE: PROPANE TRUCK TANK, 1200 gal. Dodge 1946. Good condition. Price: \$2400.00. Write Box 485, BUTANE-PROPANE News, 198 S. Alvarado St., Los Angeles 57, Calif.

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W. F. Rockwell Heads University Fund Drive

Col. Willard F. Rockwell, chairman of the board of Rockwell Manufacturing Co., has been named chairman of a seven-man committee heading the business and industry phase of the Duquesne University Diamond Jubilee Fund Campaign here.

Appointment of Col. Rockwell, who is also chairman of the Duquesne president's advisory board, was announced by the Very Rev. Vernon F. Gallagher, president of the school.

The fund campaign, which will attempt to raise \$4,250,000 to finance construction of three new buildings, opens next month. The new buildings will include a Hall of Law and Business, a Hall of Science and addition to the present library.

Top executives of six other leading Pittsburgh firms will serve on the business and industry committee with Col. Rockwell.

Group To Study Underground Storage

A committee whose main objective will be the solving of petroleum storage has been named in Kansas. Dr. J. M. Jewett of the State Geological Survey at the University of Kansas is chairman of the state committee.

Dr. Jewett announced his committee as David Chambers, of the Carey Salt Co., Hutchinson; G. H. Lancaster, district engineer, Stanolind Oil and Gas Co., Ellinwood; Joe Raskaskas, district geologist, Cities Service Oil Co., Wichita; A. T. Slagle, Phillips Petroleum Co., Wichita; and Rieman S. Webb, consulting geologist, Wichita.

The committee will operate as a unit of the Interstate Oil Compact Commission research and coordinating subcommittee, and much of the basic research will be done through state committees charged with detailed study of underground storage of petroleum and its products.

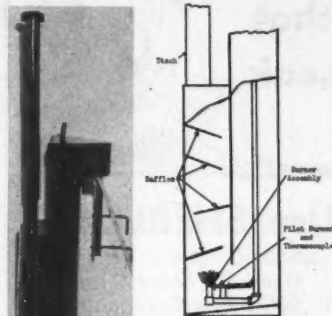
New LPG Firm For Florida

Recently opened in Miami, Fla., is Clement Gas and Appliances, distributors of Aconomy Super Gas.

The new firm carries a complete line of gas appliances and installs both underground and aboveground metered gas service.

Clement Gas and Appliances is owned by Ray and Gordon Clement.

The G-50 Stock Tank Heater

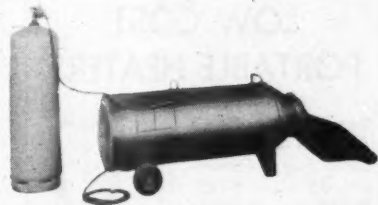


CUTAWAY SECTION OF HEATING CHAMBER SHOWING BAFFLES

The G-50 Bottled Gas Stock Tank Heater gives economy, perfect operation and elimination of condensation to the greatest possible degree because of the baffling system as shown in the cutaway section. These baffles reduce heat loss, prevent the burner from being blown out, and hold condensation directly above the burner where it is vaporized and passes out the stack.

It is simple to install as it clamps to the side of the tank with two screws. Both Automatic and Manual controls available. Weight approximately 70 lbs. Patent Pend.

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... Has Automatic Firing

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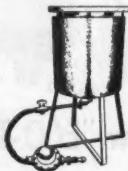
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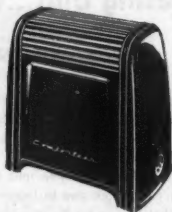
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